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## Original Articles

### PEPTIC ULCER*


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It is with a sense of deep appreciation that I come to discuss this subject tonight. When I review what surgeons, clinicians, bacteriologists and pathologists have contributed to our knowledge in this field, I have a feeling that perhaps they are very much like the prophets who are not without honor except in their own country and that it is they, instead of I, who should be addressing you. Perhaps, however, from my work of many years in the field of gastric surgery, I can bring you some of the results of that experience and the deductions I have been able to draw from them.

In speaking tonight of peptic ulcer I mean an ulcer of that portion of the digestive tract, the stomach, the duodenum, and the first portion of the jejunum, in which hydrochloric acid is normally present. Personally, I have never seen a primary jejunal ulcer although jejunal ulcers after gastro-enterostomy are, of course, not uncommon.

In considering the treatment of peptic ulcer, our opinions can no longer be based on general impressions or prejudice, for by this time enough cases have been treated by surgical methods of various kinds, and by medical methods, for us to judge by end results, as seen in our follow-up records and mortality figures, as to proper treatment. These statistics I think, are as conclusive to you as they are to me, that the majority of peptic ulcers demand surgical treatment. As Moynihan has said, "the necessity for the surgical treatment of gastric ulcer is a confession that medical treatment has failed." While in the majority of cases, I believe medical treatment is doomed to failure, there are certain types of cases which should be given this treatment, at least temporarily. By medical treatment I mean a careful supervised regime such as that outlined by Dr. Sippy.

The question that raises the most doubt in my mind, in the cases diagnosed and treated for ulcer, is, are all of these diagnoses correct? Are not many cases of chronic appendicitis, chronic interstitial cholecystitis, chronic pancreatitis and some cases of mild visceroptosis, treated for ulcer? In my experience with thousands of patients upon the operating table, I have proven this many, many times. In reality the only two absolutely reliable methods in making an exact diagnosis are sight and touch. Incision and inspection dispel doubt and reveal truth.

Those of you who may take exception to these remarks will doubtless say that the x-ray eye stands next to the human eye. I am not one of those who uses the x-ray to the exclusion of physical signs. A negative report means nothing and a positive one is only confirmatory, since a carefully taken history and physical examination are of as much if not greater importance. I have seen x-ray fail so often in border-line cases that I do not hesitate to express myself, for I know whereof I speak. I refer more particularly to roentgen-ray diagnosis of the ulcer, where the pathology is confined to the surface of the mucosa, and where the ulceration has not invaded the deeper layers of the mucosa and especially the muscular layer. While the expert roentgenologist should be and often is able to recognize the lesion, he cannot always do so; therefore, I think my criticism is justified. Clinically, we know too well that the symptomatology is often very difficult to interpret correctly, and we know the symptomatic variability of a chronically diseased appendix, which oftentimes causes digestive troubles apparently indicative of ulcer.

We know the difficulties of differentiating between a chronic appendicitis with the appendix

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in a high position, and a typical duodenal or gastric ulcer, as well as non-calculous interstitial cholecystitis and sometimes chronic pancreatitis. This being the case may I not be allowed some skepticism with regard to the medical diagnosis of ulcer in many cases? Dr. Sippy, who has been both kind and courteous enough to do me the honor of agreeing to discuss my paper, may be able to enlighten us upon this question of diagnosis and how he knows that all of his diagnoses of ulcer are correct.

The all too frequent custom of treating peptic ulcers in a medical dispensary by the administration of magnesium oxide and bismuth with no means of supervising the diet and with patients so situated economically that they cannot accept the treatment in its entirety, should be heartily condemned.

The only cases which I routinely refer for medical treatment are the acute ulcers and those having acute hematemesis without a prolonged previous ulcer history.

But I feel that cases that are refractory under medical treatment, and have had a recurrence of symptoms after such treatment, and any case with a chronic history, in the presence of definite pain with or without vomiting, or recurrent hemorrhage, or pyloric stenosis or hour-glass constriction, and cases having evidence of perforation, or leaking, operation should be the only measure considered. Mayo Robson states that evidence of hemorrhage is present in from 50 to 80 per cent. of all gastric ulcers, and that statistics show it to be fatal in from three to eleven per cent. At the University Hospital during the years from 1915 to 1922 of 231 admissions for peptic ulcer three died of hemorrhage before operation could be undertaken. Perforation is a more common danger, for according to the best statistics, as quoted by Davis, 20 per cent. of all duodenal ulcers sooner or later perforate, while about seven per cent. of the gastric ulcers perforate. At the Lankenau Hospital our findings do not agree with this, for although we operate on more chronic duodenal ulcers, we have had nearly three times as many perforated gastric ulcers as duodenal ulcers. In the same series of cases at the University Hospital, referred to above, seven of the 231 admissions died from perforation without operation. At the Lankenau Hospital, I have operated on 54 consecutive cases of perforated ulcer without a death. Charles Mayo has said "while few persons die from these conditions (hemorrhage and perforation) the number is greater than those who succumb from surgical measures, which if instituted in time, should restore the patient to health and activity."

One-third of the patients who come for operation twelve hours after perforation die, while practically 100 per cent. of those who come 48 hours after perforation die. This mortality is not due to the surgeon. It is due to a want of diagnosis or to the procrastination of the doctor who first sees the patient and who temporizes with non-surgical procedures.

A third danger is that of malignant transformation of the ulcer. While this seldom occurs in the duodenal ulcer, I believe that we must look on every gastric ulcer as potentially malignant. Let me again quote Charles Mayo. He says, "It will take years of observation to estimate fairly accurately this percentage of cancers which have occurred on ulcer, even if from one in twelve to one in six are thus developed. I believe the percentage is higher." Of 143 patients operated on for gastric carcinoma at the Lankenau Hospital (1909-1920) 44 or 30.7 per cent. gave a previous history characteristic of ulcer and of 100 consecutive specimens of gastric carcinoma removed at operation and subjected to careful histological study by our pathologist, Dr. Reiman, 38 gave evidence of having developed on an ulcer base. In this connection I may refer to Gregory Cole's recent aphorisms concerning gastro-duodenal ulcer and carcinoma. Cole believes that carcinoma is carcinoma from the start and may ulcerate sooner or later, and also that ten per cent. of the gastric ulcers of the florid type resemble an ulcerating carcinoma to such a degree, that the two cannot be differentiated either by roentgenological examination or exploration." I agree perfectly with the last part of the aphorism, and may add that sometimes even the pathologist is not sure of his diagnosis. It is difficult for me, however, to agree entirely with Cole that gastric carcinoma is always carcinoma from the start. I cannot believe that all our eminent pathologists should be so entirely mistaken in their judgment as to make it subservient to the findings of the Roentgen expert. The steps in the degeneration cannot be exhibited in the roentgenogram but they

can be demonstrated by careful serial sectional microscopic study. We might as well discard the microscope altogether if such were not the fact.

The question of malignant transformation of gastric ulcer is indeed a perplexing one. We all experience instances in which patients return with cancer two or three years after excision of an ulcer which was reported benign by the pathologist as in the following recent experience:

No. 2913/22. Male, aged 32 years, was admitted to the Lankenau Hospital, September 27, 1922. He had been a patient in the Hospital in November, 1918, with a three years' history of gastric disturbance, suggestive of ulcer, but lacking the clear cut history of the typical ulcer. At operation a livid area was found on the greater curvature of the stomach, a little distant to the pylorus. Subtotal gastrectomy with a posterior gastroenterostomy was done. The man remained well for two years when he began to have a return of digestive trouble. This consisted mainly of almost constant epigastric pain, aggravated soon after eating, and relieved by belching. The pain was dull in character, radiating through to the back and upward toward both shoulders. Vomiting occurred occasionally, but there had been intervals of two months without vomiting. The vomitus consisted of food, but never contained blood. Bowels are markedly constipated. Dyspnea and palpitation on exertion and loss of 40 pounds in weight in the past eight months were also noted.

Physical examination revealed tenderness on pressure and resistance over the entire epigastrium. A large mass was palpable in the mid-epigastric region. At operation, October 2, 1922, a large inoperable mass was found involving the stomach at the site of the previous section and infiltrating the posterior gastroenterostomy opening, which though small was still patulous. There was no evidence of hepatic involvement. An anterior gastroenterostomy was done and the wound closed. The patient has made a very satisfactory convalescence; he says he is relieved of the pain and the epigastric distress. I have had a number of experiences of this kind.

The immediate operative mortality of peptic ulcer will vary according to the type of operation done. At the Mayo Clinic in 4532 cases of duodenal ulcer the operative mortality was but 1.76 per cent., while in the 1191 cases of gastric ulcer the mortality was 3.77 per cent. At the Lankenau Hospital in 351 cases (1909-1920) of duodenal ulcer the mortality was 3.7 per cent. (13 deaths) while in 126 cases of gastric ulcers it was 6.4 per cent. (8 deaths). The mortality depends not only upon the type of operation but also on the condition of the patient when he is sent to the surgeon. All too frequently the internist and the general practitioner impress patients with the operative mortality and then send them to us long after, as neglected, complicated cases, suffering from obstruction, perforation or hemorrhage. The internist when he speaks of the operative mortality, I am afraid fails to emphasize the dangers of delay and the risk of malignant transformation, perforation, hemorrhage and of recurrence of symptoms which almost invariably takes place. Of course neither are all patients entirely relieved after operation, but recurrences are certainly vastly less frequent than after medical treatment. Prominent among the causes of such recurrence (exclusive of marginal ulcer) is indiscreet diet and for this reason as I have already stated the appropriate time for medical treatment is not before but after operation. Persistence of symptoms in spite of all care and precaution, supplemented by careful roentgenologic study with demonstration of a mechanical disturbance should demand re-operation at once, since such mechanical defects can be relieved only by mechanical means.

Not all recurrent cases are due to marginal ulcer. Sometimes they are caused by the formation of a new ulcer. The danger of delayed surgery in these cases is well illustrated by the following example.

A male, aged 36 years, was admitted to the Lankenau Hospital in January, 1919, and after a careful study a diagnosis of duodenal ulcer was made, the ulcer was excised and a posterior gastroenterostomy was done.

The patient failed to get relief and five months later again presented himself for treatment. At this time operation consisted of releasing adhesions. The man remained comfortable for two months. In August of the same year he was again admitted, complaining of typical ulcer symptoms: pain three to four hours after eating; nocturnal hunger, relieved by food or alkalies. Medical treatment including duodenal feeding gave only slight relief. In April, 1922, he again presented himself for admission to the Lankenau Hospital with the same ulcer history. The diagnosis of marginal or a new ulcer or a second ulcer not found when the first operation was performed, was again made, but for personal reasons operation was postponed. Two weeks after his discharge he was seized with severe epigastric pain, accompanied by weakness, fainting, and vomiting of a small amount of bright blood. This brought him to the University Hospital under the care of Dr. Stengel. On admission, examination showed no special physical signs. The blood count was as follows: hemoglobin 70%; R. B. C. 2,850,000; W. B. C. 10,000. The gastric contents showed total acidity 26; free HCL. Lactic

acid positive. Occult blood positive. Traces of fat, no Oppler bacillus. A first urinanalysis was negative for acetone and diacetic acid, but the second and third were positive for both. X-ray summary: The gastroenterostomy opening is patulous; pylorus also patulous, most of the contents passing through the former. No definite evidence of any organic lesion, although this is somewhat uncertain because of the rapid evacuation of the stomach, which was almost entirely empty at the end of one hour. There is no obstruction in the small intestine. Operation, on May 16, revealed an ulcer on the posterior wall of the stomach, adherent to the pancreas. The stomach was opened, the ulcer excised, and the abdomen closed in the usual manner.

Postoperative care consisted of liquids for ten days; on the fourth day there were added orange juice every hour with soda bicarb, grains 15, every fourth hour. The diet was then gradually increased to peptonized milk, two ounces, every second hour. Before discharge on June 20, the patient had been allowed solid food. Blood count showed: Hemoglobin 45%; R. B. C. 3,000,000; W. B. C. 9,500. The patient was in fair condition; there were a few squeaking rales in left lower chest, on inspiration and expiration. Abdominal scar almost healed; dressing still in place. Heart showed a systolic murmur over the body of the heart, heard best at pulmonic area.

Dr. Stengel has seen the patient several times at his office since then and reports that he is doing well.

One of the strongest arguments in favor of the surgical treatment of peptic ulcer is that a gastroenterostomy accomplishes permanently what the medical treatment does only temporarily. However, gastroenterostomy alone does not accomplish the same thing as when combined with excision, cauterization, pylorectomy or a subtotal gastrectomy. In fact, gastroenterostomy alone, except for cicatrical obstruction of the pylorus is only a makeshift and side steps the issue. The constant reflux of alkaline duodenal secretion into the stomach lowers the gastric acidity with the patient's own alkalies, and permanently offsets the effects of pyloric spasm or stenosis.

Gastro-jejunal ulcer unfortunately occurs in a certain percentage of patients who have had a gastroenterostomy done as part of the operative cure. Just to what this may be due it is impossible to say. However, I feel that if attention is paid to the avoidance of trauma due to the use of clamps over a long period at the site of the opening, to the suture material, and to the elimination of all possible foci of infection, this apparently unavoidable complication can be partially eliminated. The last mentioned factor is of the greatest importance since we eventually find patients are hypersusceptible to ulcerations and that the same cause which was responsible for the original ulcer may be the cause of the secondary one.

Another very important factor which is too often overlooked by many of us, is the care of the patient after his immediate recovery from the operation. A patient who has had a gastroenterostomy for ulcer should not be allowed to leave the hospital without definite instructions as to his diet and habits of eating. This is another occasion when the internist and the surgeon in cooperation can accomplish results impossible to either alone. After operation, I have often had patients say to me, I can now eat any and everything, and more than ever. This is the answer to the importance of after cure.

In reviewing the advantages of surgery we must not forget that frequently ulcer co-exists with a chronically diseased appendix, gall-bladder or pancreas. These lesions can also receive the proper attention when the abdomen is opened, thus enhancing the patient's chances for permanent relief and well-being.

If you should ask me which operation I prefer I would answer, there are no hard and fast rules in any surgery, much less in abdominal surgery. Each patient who presents himself must be treated along the lines that give promise of the best results. The patient must not be fitted to the operation but the operation or operations fitted to the conditions found when the abdomen is opened. But in order to be a little more definite it might be better to say that other things being equal excision of the ulcer or cauterization by the Balfour method followed by gastroenterostomy, is the procedure of choice. However, there is a large *but* that looms up to modify this statement. Other things are rarely equal, and the powers, whatever they may be, that afflict mankind with peptic ulcers do not always place them where they can without great difficulty be removed, or as sometimes happens, in perforating ulcers the surgeon is spared the trouble of removing them, although I have observed the recurrence even of perforation in two instances.

I hope that I will not be misunderstood by you. There can be no doubt as to what surgery has done in disclosing the pathology of the living

in peptic ulcer. It has established a relation between ulcer and carcinoma which we must not ignore, for as Bland Sutton says, "the ulcer of today may be the cancer of tomorrow." It has shattered our former conception of chronic dyspepsia and gastritis and has helped us draw a line between the neuroses and the true pathological lesions. I have said before and repeat that the stomach tube is of as little value in the treatment of peptic ulcer as is the catheter in the treatment of prostatic hypertrophy. The results to be hoped for will come when everyone realizes that we are all here for one purpose—that is to help mankind. It is for you men who see the cases early to assist the surgeon while there is still a maximum opportunity for complete cure. To me it is extremely doubtful whether a true peptic ulcer, as distinguished from an erosion, ever heals under medical treatment. Surgery does not lay claim to 100 per cent. of cures, but there is sufficient evidence to say that 75 to 90 per cent. plus are cured or markedly improved by operation. Every ulcer patient who reads the signboard at the crossroads and chooses that road which takes him to medical treatment, assumes four risks: chronic invalidism, carcinoma of the stomach, or, rarely of the duodenum, hemorrhage and perforation.

## DISCUSSION

DR. ARTHUR DEAN BEVAN expressed his enjoyment of Dr. Deaver's enthusiastic presentation of his point of view of the subject of peptic ulcer, and presented briefly the point of view that had been developed in his own work in clinical research which had been carried on during the last ten years in the surgical and medical departments of Rush Medical College and the Presbyterian Hospital.

He believed the subject of peptic ulcer was neither medical or surgical but a big scientific problem that all were trying to learn the truth about. Certain things had been learned in the last twenty years but prior to that time nothing was known about duodenal ulcers and most of the knowledge of gastric ulcer came from the postmortem table. Today it could be said beyond any question of doubt that a peptic ulcer in the duodenum or stomach could be cured in exactly the same way that an ulcer of the leg could be cured. An ordinary varicose ulcer the size of the duodenal or gastric ulcer could be cured in ten days or two weeks if the essential cause was removed and the patient placed in a condition where healing could take place. If the interference with return circulation was eliminated and the patient put to bed with the limb elevated the varicose ulcer could be cured. Any dressing would do if the cause was eliminated. Making a parallel between this and an ulcer of the stomach, if such an ulcer could be placed in condition where the cause which maintained and continued the process could be eliminated, in the great majority of cases the ulcer could be cured and the tissues would go on to complete healing, the cavity being filled up by granulation tissue in exactly the same way that the leg ulcer was cured. This could be done by a jejunostomy and placing the part absolutely at rest, feeding the patient through the jejunostomy tube for a number of weeks, but it is not necessary to do a jejunostomy in every patient. There has been developed a perfectly sound and scientific management for the ordinary peptic ulcer, rest of the part, bland diet and rest of the individual. The removal of the essential cause that maintains the ulcer, the acidity of the gastric juice, can be accomplished by the administration of alkalies. He believed it true that every once in awhile an ulcer would prove refractory where conditions for healing were very poor.

Applying the Golden Rule, what would John Deaver want done if he had an ulcer? He would want in the first place to be placed in the hands of a thoroughly competent internist where he could be given the benefit of modern scientific treatment for ulcer, and the chances were that he would be back at work in the Lankenau Hospital in three months, and if he behaved himself and did not eat too much and work too much he could maintain the cure with a great prospect of certainty.

Dr. Bevan believed it true that there are certain definite indications for surgery and that possibly some of the medical men are not willing to give these indications as much consideration as they deserve. In a common-sense way 90 per cent or more of duodenal ulcers that are refractory to medical treatment will heal under gastro-enterostomy, they do not require resection and there is little danger of carcinoma. Old, calloused, gastric ulcers that come to the surgeon should be resected. The Bilroth resection gives excellent results with a mortality of not more than 2 or 3 per cent, and the danger that one is dealing with a potential carcinoma is the big argument for doing the resection.

He did not agree that in a large proportion of the cases carcinoma of the stomach is preceded by ulcer, but there is a possibility that ulcer may furnish the base for a carcinoma. What is more certain, in his opinion, is that it is a carcinoma from the beginning that resembles an ulcer.

He believed the time had come when by good medical management and good surgical management in the individual case where it is demanded an enormous amount of good service can be rendered in handling these cases. In no field of surgery is there being done more brilliant work than in the field of peptic ulcer and carcinoma. When the ulcer does not heal under medical management it furnishes a means of diagnosis. That case becomes a carcinoma

suspect and great good can be done by careful study of the patients and giving them the benefit of the radical surgical removal, which gives a great deal of prospect of permanent cure.

DR. ALFRED A. STRAUSS was much interested to hear that Dr. Deaver's views had not changed from those of eight or ten years ago. At that time Dr. Strauss read a paper demonstrating a method of excision of gastric and duodenal ulcers and Dr. Deaver agreed with him in the importance of such excision. The speaker believed that the sub-acute ulcer, up to the point of infiltration, was a medical condition and that many of them would heal under proper medical management. When the ulcer penetrates into the wall of the duodenum or stomach very few will get well under medical management. He believed the economic condition of the patient should be considered and that it was not right to take a man in moderate circumstances and keep him in the hospital for weeks under medical management when he could be cured in a short time by surgical measures.

In peptic ulcers he thought the practical point was not whether an ulcer will become a carcinoma or whether it is a carcinoma from the start. This cannot be definitely determined without microscopic examination and he thought no medical man wished to treat a carcinoma medically. Until some test is discovered for determining this without operation he believed all such cases were surgical. When one considered the pathology that might go under medical treatment, the hemorrhage, perforation, and the possibility of cancerous degeneration, he believed everything was in favor of surgery.

As to the type of surgery, he believed two great principles were necessary to cure a patient surgically of a gastric lesion; first, the pathology must be removed and, second, the stomach or duodenum must empty in less than normal emptying time. If this is done the patient will be cured chronically and will need very little attention from the medical man afterward. The ulcers in the first and second portions of the duodenum, down to the ampulla of Vater, should be removed by block resection; by making a resection of the duodenum closing off the stomach and then doing a posterior gastroenterostomy, or Polya operation. The ulcers on the lesser curvature he thought did not need to be resected by a high gastrectomy or sleeve resection but that the lesser curvature could be easily resected by a longitudinal resection which he had devised. He had performed this operation with exclusion and obliteration or resection of the lesser curvature on nine patients, with excellent end results. (Presented a series of lantern slides demonstrating his method of operating.)

DR. E. S. BLAINE said that to those who confine their work to x-ray study of the lesions under consideration it was a comfort to hear Dr. Deaver place the x-ray aspect in the light he did. Careful x-ray study should be stressed, in view of the slipshod work done in many places. There are three kinds of Roentgenologists; one, the enthusiast about the fluorscope; two, the enthusiast for the multiple plate manifestation of lesions of the stomach; three, he who uses both, giving full value to the advantages of each. Cole of New York is probably the foremost exponent of the 30 to 50 exposures and minimizes the screen. Carman uses the screen and the great majority of his patients never receive a plate exposure. Between these two he believed there was no choice; both are necessary. The over-enthusiasm for any particular method should be avoided and one's faith should be pinned to the one who is thorough and will give full value to both methods. Thorough careful work will reveal many lesions of small size which are overlooked by precursory examinations. The peculiar quantity of x-ray projection gives merely silhouettes and many silhouettes are necessary in order to thoroughly explore the stomach. A thorough study by the x-ray will reveal any lesion except those of microscopic size and no one should expect those of microscopic size to be shown. The ulcers in front of or under the lesser curvature are difficult to find, but recently he has been finding a good many of the ulcers posterior to the lesser curvature. It is true that there are a good many secondary signs of these ulcers, but it takes a trained eye to detect them.

The polygram which may be used by those who wish to reduce their expenses removes the excuse for not doing thorough work. The polygram makes as many exposures as one wishes to take in the time the patient can suspend breathing.

The question of mucous erosions was a difficult one and a small percentage of ulcers would not be demonstrated by the open and shut method showing the little knob on the lesser curvature. He thought it fortunate that 90 or 95 per cent of the gastric ulcers occur on the lesser curvature, and believed this method would reveal them in a greater majority of instances than some doubting Thomases were willing to admit.

DR. BERTRAM W. SIPPY agreed with Dr. Deaver when he deplored the too frequent practice of giving magnesium oxide and other alkalies in the dispensary without due attention to the living conditions of the patient. They are often administered in such a manner as to deprive the patient of such beneficial effect as may be attained by proper treatment. It has been generally stated that peptic ulcer occurs only where gastric juice flows. Local malnutrition of the stomach or duodenum is an essential factor in the production of ulcer, the destructive action of the gastric juice on such areas contributing not only to the presence but the chronicity of the ulcer. It had been well recognized that ulcers produced experimentally heal rapidly and it is known that tissue that is well nourished is able to resist the irritating action of gastric juice. It is equally well known that when the vitality is reduced the peptic gastric juice may produce pathology. With perforation and a loss of vitality the action of the gastric juice hinders healing. In all the cases he had under

treatment he challenged anyone to find a single case after the second day that had ever perforated or that had ever had a hemorrhage. The defect disappears under proper management and at the end of four weeks it is gone. The ulcer is not healed but the tissue has become pliable and the lesion will go on to healing. There is a technic in the medical management the same as in a Deaver operation and if the proper technic is not carried out it will fail. Dr. Bevan had presented the subject as they saw it. Their conclusion, based on experience of many years with ample facilities for carrying on the work, was that these cases did not demand surgical treatment. He agreed that there were definite surgical indications in some instances,—a perforation, any reason to suspect carcinoma, certain cases of hour-glass stomach with interference with motility, in such well recognized cases no one doubted that surgical treatment should be instituted at once. With those cases put to one side, and when the x-ray failed to reveal the deep infiltrating ulcer, the vast majority of cases would recover under medical management.

As to whether medical or surgical methods should be introduced depended upon the type of surgical management that was available. Here the skill of the surgeon is a greate factor. For men of Deaver's experience the mortality is relatively low. The second factor was influenced by the type and effectiveness of the medical management that was to be used. It is recognized that rest, the type of food and the treatment of constitutional conditions is important, but there is every evidence to show that proper conditions cannot be brought about without removing by alkalinization the greatest factor in the hindering of healing. If the patient was kept in bed with merely a little soft food and a little magnesium to control the pain he would admit that the vast majority of those cases might be treated surgically by a man of Deaver's or Bevan's skill, but they could be treated accurately in a way they knew would bring about healing.

As to mortality, at a symposium on the end-results of peptic ulcer held last May a mortality of 6 to 9 per cent was given by the experts who took part in the symposium. If this is true, largely from the operation, what could be expected from men who try to imitate these experts? Unfortunately, Dr. Deaver and his type of men operate on relatively few of the ulcers in the world and if anyone raised their voice and said there was no method of healing except surgery the mortality would be very great.

DR. FRANK SMITHIES said that he had listened to and taken part in many such discussions, that he was familiar with the literature of all time, that he had had a large experience and had come to the conclusion that there were so many phases to peptic ulcer that were not understood that many of the conferences got nowhere. In reviewing the literature he had found that with the exception of certain surgical modifications no real contribution had been made to the treatment of peptic ulcer in many years. The alkalinization was complete before the use of the stomach tube and at that time the mortality was given as about 6 per cent and the cure as 70 per cent. Then came the surgeons and handled a number of complications and treated ulcers by radical surgical method, with 70 to 75 per cent cures, which meant that these radical measures did not vary 2 per cent.

He considered peptic ulcers as local manifestations in the stomach of a general constitutional upset and believed that any attempt to treat the local gastric condition was an attempt to treat certain complications which occur in the course of a constitutional affair. He believed Dr. Deaver was right in the type of ulcer he treated and that Dr. Sippy with his method of diagnosis was right in the type of patients he meets and treats but if one could put a tag on the patient with a gastric or duodenal ulcer and keep it there until he came to the undertaker he would find a very interesting history. The surgeon has the advantage of the medical man because he can see and record what condition is present while the medical man cannot keep such a complete history. Relief of symptoms is considered as cure. Peptic ulcer is an intermittent type of disease until complications come on. We should realize first of all that we do not know much about peptic ulcer. We should not promise a cure either by medicine or surgery but treat the patients and keep them under observation. The best type of medical man is the one who can keep track of his patients and send them to the surgeon when necessary. The next thing is to get rid of the old ideas concerning the gastric juice. Dr. Smithies treats his patients non-surgically by surgical methods, putting the part at physiological rest. He uses no stomach tube and no alkali. The danger of frequent alkalinization has been repeatedly impressed by many authorities and he believed too much alkalinization as bad as too much acid. If the part is put at physiological rest for thirty-six to forty-eight hours there is no acid secretion. If the case shows a definite deformity by the x-ray examination the surgeon should be given a chance to get rid of a potential cancer if in the stomach and of a potential perforation if in the duodenum.

DR. A. J. OCHSNER, speaking of the feature of carcinoma, stated that in all parts of the body the advent of carcinoma is preceded by inflammation and irritation. The fact that there are so many ulcers of the stomach and so few carcinomas has impressed the profession that possibly the ulcer has nothing to do with the advent of carcinoma. He believed one might as well say that because so many soldiers go into a war and so few are killed the war has nothing to do with those that are killed.

Another error has crept in where carcinoma has been demonstrated at autopsy or at operation and they find in these histories no reference to previous ulcer history. This meant simply that the history had been carelessly taken. He had demonstrated in his work in looking up the histories that attention had not been focused upon that feature in the history. He be-

lieved that in almost all cases where a careful history is taken a carcinoma patient gives a typical history of preceding ulcer. He cited the case of a patient seen twenty years ago who had nearly died from a perforation. At operation they found a large indurated ulcer. They thought it would never get well but they did a gastroenterostomy as the best means of relief. Two years later the patient had an extrauterine pregnancy and when he operated for that condition he found that the ulcer had entirely disappeared.

DR. JOHN B. DEAVER (closing) thanked the gentlemen for their discussion. He was not in accord with all that had been said but thought, every man had a right to his own opinion and was glad they had expressed it.

He did not agree with Dr. Bevan that peptic ulcer could be treated like a varicose ulcer of the leg and cured in the time stated. He thought they must have very simple ulcers of all kinds in Chicago if this was the case. In Philadelphia they have the real thing.

He also did not agree with Dr. Sippy regarding frequent alkalinization. This may bring relief for a short time but the patient soon returned with the same old story. He took exception to any man who made a diagnosis of ulcer without x-ray examination, and defied any man to make a differential diagnosis between appendicitis with the appendix in a high position, cholecystitis and other conditions without this aid. He did not believe half of the cases treated as ulcer were ulcers, and made this statement because he was constantly seeing such cases. He believed the only way a proper diagnosis could be made was with the belly open, when truth will be revealed and doubt dispelled. If he had an ulcer he might rush to Sippy for one course of treatment but if he had a recurrence he would run away from Sippy. He knew that Dr. Sippy was doing a great work but believed, if he had not verified his diagnosis by sight and touch, that he was treating many cases that were not ulcer.

He himself has seen many errors in diagnosis made by the x-ray men regarding deformities of the duodenal cap as indicative of ulcer. When the patients come to the operating table these are always found to be due to adhesions.

Dr. Strauss he thought had devised a very ingenious operation, for which he was to be congratulated, but Dr. Deaver thought it a little too difficult for him to tackle. His best surgery was done with the fewest instruments and his fingers, but in the hands of Dr. Strauss anything was simple and he was glad of the enthusiasm shown by the young men.

He thought Dr. Smithies hit the keynote to a very large extent with regard to the history of ulcers, and also with regard to the internist's following up the cases.

He believed in Dr. Ochsner and in everything he said, because what he said he has learned in his great experience in the operating amphitheatre.

A rising vote of thanks was extended to Dr. Deaver for his courtesy in coming to address the Society.

# THE MANAGEMENT OF MATERNITY*

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SILVIS, ILL.

While the management of maternity dates from the generation preceding, for purposes of discussion it must be limited to a more definite period. The obvious delineation is that period which elapses between the date of conception and the end of the puerperium. During this time certain body changes of structure and function are normal and certain pathological aberrations are peculiar to the period.

If these few assumptions may be granted, then the safe conduct of a patient through maternity depends upon two things: first, the anatomical capacities and the functional powers inherent to the body itself; and second, the accuracy with which the manager of the patient observes, interprets, co-relates, and treats aberrations peculiar to the period or arising during the time.

The management of maternity is the practice of medicine inasmuch as the practitioner of medicine does just those things for the entire span of life: he observes and interprets and co-relates and treats and, in each instance, the objects of his attention are human anatomy, physiology and pathology.

To demonstrate that proposition before this body would seem gratuitous were it not for the fact that we have evidence of much confusion on that point among members of the medical profession. I believe that members of the profession have never advocated the training of midwives with the idea that the conduct of labor by a partially trained group might be a scientific advance but it is true that they have claimed it to be an economic necessity. I believe none have advocated the training of nurses as community instructors in the hygiene of pregnancy with the idea that their miscellaneous public teachings might have sound value without being tempered by training in the art of observing and interpreting scientific facts and functional aberrations; but it is true that members of the profession have lent aid to such programs when sponsored by reformers deficient in the ability to appreciate the character of the questions involved or the enormity of teaching without understanding. Without training in interpetation and co-relation

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such teachings must always be dogma while, with that training, an excellent class of practitioners would have been created who would know that the community teaching of the hygiene of pregnancy is the teaching of general hygiene and that, beyond that, all teaching and all management must be individual. It is so for the reason that practitioners outside the laboratory never deal with pathology but with emotions plus pathology.

The dogmatic teaching of fact pre-supposes absolute knowledge. The partially trained may impart it to the untrained as such but the profession whose tenets we strive to uphold, knows that in matters of practise we are not possessed of absolute knowledge, but only of relative knowledge.

These two classes as trained today have a limited field of usefulness. The teachings of modern medicine can grant to them unqualified approval only when they appear in the role of assistants.

The emotional complex of the patient in maternity makes additional difficulties of interpretation which preclude the advisability of assistants working without some degree of personal contact between the patient, and the supervisor, trained in evaluation as well as in anatomy, physiology and pathology. Some reports may be satisfactorily made by mail or by telephone but, in every instance, there are times when personal observation and individual responsibility are necessary.

It is not my purpose at this time to discuss matters of legislation but, I do wish to invite the attention of the medical profession as here represented, to the fact that all the scientific knowledge in the world can have no value to the woman in maternity unless attention be given to the art of holding the individual patient still while we administer the dictum of science.

Maternity care in the United States will continue to be accomplished in the home and the small hospital and will continue to be considered by the patient and her family to be an individual concern and a private, family matter; this, in spite of the radical proposal that instruction be issued to these women as a class and that the teaching emanate from bureaucratic Washington.

The response to instruction will continue to be in proportion with the receptivity of the audience.

Maternity carries no public menace and therefore cannot be properly made a subject for police regulations which mark the management of contagious diseases. Without that factor of danger to a neighbor, a government which is to live cannot dictate family opinion or procedure in the home.

The responsibility of the medical profession in this matter is great, for the members of the profession are alone in the understanding that, in matters of practice, none of our knowledge is absolute. We know that we are possessed of relative knowledge only; we know that what we teach as relative, what we advise as the best possible in view of our limited information, is repeated as dogma. We know that group-thinkers, the so-called saviours of the proletariat, teach medical wisdom which is untrue and believe it to be fact because they have it from the pen of perhaps the greatest authority in the land. We have not yet been forced to learn the magnitude of the harm accomplished but the progression is such that today we stand guilty of willful neglect in not having gone to our public with a statement presented in adequate fashion.

Our learning is progressive. We may teach for a time that puerperal sepsis is of extraneous origin, dependent upon faulty technique in the conduct of labor; and when we have spread that gospel thoroughly the old theory of hematogenous infection may rise like Banquo's ghost to confront us, never disproven and probably true. Our limited knowledge of physiologic processes may give us pause and so influence our practises that we endeavor to give due care to both possibilities. The error of having taught one as absolute would be apparent. To weigh and to consider and to act upon such problems of practical application is not the province of government nor of group workers whose limited training has led them to accept one teaching or the other. To argue such a question in the halls of Congress or before a lay jury would be imbecilic endeavor and yet each patient is entitled to the best judgment of an informed mind.

In view of which, the plea of Glenn Frank that a scientific profession should learn to "think of health in terms of a nation" becomes a paradox and more. To think of health in terms of a nation is to think of a building in terms of a city. There is a type of mind which does that, whose reaction to the stimulus word "Building" is a vision of row on row of immense structures

with gaping windows and, in the foreground a chasm—deep—its bed sprinkled with moving specks, and from which arises noise. There is another type of mind whose reaction differs. At the stimulus word "Building" a carpenter or a mason sees bricks and flooring and doorknobs and studding and nails and mortar; and this is the more constructive vision. These men can build but never, by edict of government, can they teach the other group to build.

The members of this society are the men and women who have managed the maternity of three states and these members have not reacted to the word "Maternity" with any vision of throngs of mothers and babies—all smiling. They have reacted with visions of detailed problems involved in the care of maternity and they know that, after all the centuries of effort, this management is still building bit by bit.

To these people who can build, the vaporings of community management enthusiasts are a foreign language; and yet they are of live interest.

Beginning with the day when the diplomas of reputable medical schools were vised and approved by boards of political appointees, the direction of scientific learning and the prescribing of methods for the art of its application have been increasingly assumed by legislative and lay bodies until many people have grown to believe that to rule it so is to have it so. The fallacy of so disastrous a belief rests as a heavy responsibility upon the general practitioners, the men who have been termed the "submerged ninety per cent." of the medical profession, the men who observe patients at home and whose economic observations and judgments thus grow from the primary foundation rather than from the distorting environment of a large clinic or hospital.

In so far as the profession has been led to give tacit approval to plans for the empirical administration of impossible teachings by partially trained group-instructors, we have degenerated and failed of our heritage.

For a five-year period this failure has imposed upon our public an act which is described by a member of its administrative bureau, Dr. Anna E. Rude, in the *Journal A. M. A.* of September 16, 1922, as an Act for the furtherance of Midwifery in the United States. The words of Dr. Rude presumably carry the weight of authority for she speaks to the A. M. A. for the bureau.

I quote Dr. Rude, in stating the purposes of the Bureau under the Federal Maternity Act, page 959, "Unprecedented attention to the registration of midwives, as well as to their training and supervision, is contemplated in many states in which previously this problem has been entirely ignored." And again, buried in some two columns of midwifery discussion, we find on page 961: "Midwives in England have been trained and licensed since the Midwives Act became a law in 1902. Between 1902 and 1914, the maternal mortality from puerperal septic diseases in England and Wales has decreased from 118 to 75 per million female population."

It seems to me that the clearly intended inference of that unique couplet is that the midwives did it.

Dr. Rude is the Director, Division of Hygiene, United States Childrens Bureau.

We are not relieved of responsibility until we shall have overcome a popular belief that the proposed teachings are absolute truth, bearing the endorsement of the workshops of science. The truth is that some of these teachings were good relative conclusions at the time of their promulgation and that at the best, the secondary instructors are usually a decade behind. As long as the field of physiology harbors the vast area of unexplored jungles that it does today, teaching must be relative and interpretation and correlation must be individual.

Now, when it is proposed that praiseworthy teachings and practise be taken from the hands of those able to use them at an approximate true valuation and broadcasted in an unwise manner by people with no conception of relative values, then it is time when we must revert to the old established idea that hard work and detailed drudgery are necessary to success; and that the expert use of the five human senses is a prime factor in the diagnosis and treatment of maternity ailments for each individual case.

The public has been taught to believe that the medical profession treats with medicine or with surgery, one or both. If they were taught that every remedial measure ever proved to have value, through all the generations of history, was included in the armamentarium of the profession then we might expect less of meddlesome interference with the management of physiologic conditions and aberrations.

We should now ask that the men who are pos-

sessed of understanding train their people to believe that generalities in education or treatment are always faulty, that the radical proposal for government help in an extra-governmental matter is certain of failure because it attempts to build from the top down, that we must distinguish between the necessary autocracy of emergency management and the necessary conservatism of normal living. And in addition, I ask that any member of the profession who is still "sold" on any grandiose plan for group maternity welfare consider this, an idea which is born of plodding inquiry at the source: maternity patients will continue to regard their problems as individual and to prefer sympathetic understanding to machine-like efficiency. These people will accept the benefits of scientific information if made to suit their taste but they cannot be compelled and, in matters of practise, when scientific knowledge conflicts with human emotion and the emotion is not controlled, then so much the worse for science; and consequently for the patient.

We should endeavor to remedy our faults. If our neglect of the puerperium is so general as to constitute a scandal or if bad judgment in the conduct of labor has wrecked an undue proportion of women, we should be the first to acknowledge and to decry. But the remedy would lie within the profession and be a matter of work, and public good is not to be had through the legislative fostering of illy-equipped mid-wives or other practitioners, or through the rantings of lay reformers, except in so far as such measures stimulate us to see and correct our own shortcomings. Any attempt at the Socialization of Physiology will fail but very great harm may result from the attempt.

136 Ninth Street.

## THE RELATION OF THE NOSE AND THROAT TO EAR DISEASES*

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Otology is intimately connected with rhinology. Men practicing otology are now prepared to take care of nose and throat conditions. This is as it should be and is a much better arrangement, than where the ophthalmologist undertook the treatment of ear diseases leaving for the laryngologist the care of nose and throat disorders. That ear disease is often caused by diseases of the nose and throat is too apparent to require any special emphasis. It would not be amiss, however, to point out just what ear diseases are caused by nose and throat disorders and to make a clear statement of just what nose and throat conditions are capable of affecting the ear.

In the first place, it must be clear to all that it is only the diseases of the middle ear that are primarily related to nose and throat troubles. Internal ear disease is never caused directly by nose and throat conditions if we except the possibility of degeneration of the eighth nerve occurring as the result of focal infection. The most frequent example of the relation between middle ear disease and nose and throat trouble is in the occurrence of acute otitis media secondary to acute inflammatory reactions involving the membranes of the nose and throat. Acute otitis media is rarely encountered as a primary disorder. Another form of middle ear trouble which is directly dependent on pathological conditions in the naso-pharynx is the condition causing tubal occlusion observed so frequently in school children and caused by hypertrophy of the pharyngeal tonsil. This same condition occurs, but of course less frequently, in adults sometimes as the result of an acute pharyngitis or because of the persistence of lymphoid hypertrophy in the vault of the pharynx. This form of middle ear trouble is one of the earliest as well as most constant symptoms resulting from malignant growths having their origin in the fossae of Rosenmueller. Occasionally the simple type of chronic suppurative otitis media when the disease involves only the mucous membrane lining the middle ear chambers, but does not extend to the underlying bone is kept up because of the pharyngeal tonsil. In exactly the same way cases of tubal occlusion persist and develop into the chronic adhesive processes in the middle ear, causing permanent disturbance in hearing because of neglected hypertrophy of the pharyngeal tonsil. Such conditions occur not infrequently where the hypertrophy of the lymphoid tissue is located in the fossae of Rosenmueller and does not cause any impairment of nasal respiration.

When we have covered these conditions we have included practically all of the relations that occur between middle ear disease and nose and throat troubles. With the development of a

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fuller appreciation of these relations between middle ear disease and nose and throat trouble there has developed a tendency to associate etiologically the occurrence of middle ear disease, including the more or less insidious form of adhesive middle ear catarrh with the occurrence of certain anatomical variations commonly found in the nasal chambers. I refer especially to the anatomical irregularities in the nasal septum which may or may not be causing symptoms of obstruction to nasal respiration. It has long been the practice of many otologists to advise the correction of these irregularities even where they are causing no nasal symptoms because of their supposed injurious action on the middle ear. The theory being that these irregularities of the septum even where they are not producing symptoms of nasal obstruction constitute an active cause of middle ear disease through mechanically altering the normal air currents in the naso-pharynx.

I have for many years been studying closely this problem and have become thoroughly convinced that anatomical variations in the structures in the nose either by producing obstruction to nasal respiration or by altering the air currents in the naso-pharynx have no effect on the course of middle ear disease. This conclusion is based on the following clinical observations. In the first place, I have never been able to discover any evidence that the correction of such variations has influenced in the slightest the course of middle ear processes. As a matter of fact, irregularities in the nasal septum are the rule while the anatomically straight septum is the exception. The most convincing evidence that alteration in the air currents through the nose or actual obstruction to nasal respiration take no part in the etiology of middle ear disorders is to be found in those cases of congenital atresia of the choanae where the passage of air through the nose on one or both sides is completely blocked. I have had the opportunity of studying two such cases. In both there was a complete absence of any middle ear trouble. Of all cases of this sort so far reported there has not been a single instance where there was any disturbance of the middle ear.

It is time for otologists generally to recognize more definitely the limitations of the proposition that conditions in the nasal passages may be the cause of middle ear disease. While all of us are properly anxious to do everything that can be done for patients with increasing deafness, we are equally anxious of avoiding unnecessary treatment, especially where this involves surgical interference.

## DISCUSSION

Dr. Robert Sonnenschein, Chicago: You will pardon the trite expression when I say the diseases of the nose and throat which influence the ear fall into two classes—the inflammatory changes in the nasal cavities, the adenoid tissue, or tumors in the naso-pharynx, and in the pharynx itself the large or infected tonsils. Of the infectious and inflammatory type would be the suppurative conditions found in the nose, the accessory sinuses and pharynx. Dr. Shambaugh has rendered excellent service in calling attention to the fact that too much importance must not be placed upon mechanical conditions in the nose as etiological factors. I believe when the nose is much obstructed and when you have much hypertrophy of the posterior end of the turbinate it is responsible for interference with the Eustachian tube. The most important thing to me is the fact that you must know the kind of ear condition you have before you can attempt to treat it by way of the nose or in any other manner. As Dr. Shambaugh has pointed out, it is the middle ear changes that are affected by these conditions. If we know anything of the pathology present, we certainly cannot expect to derive any benefit in a case of otosclerosis or any adhesive process in the middle ear, by working on the naso-pharynx. We must first determine the condition that is present or we cannot do good work in any part of the body.

Dr. Oliver Tydings, Chicago: I was very much surprised to hear Dr. Shambaugh say that nasal obstruction acnnot affect the middle ear. I have three cases, one on the Pacific Coast and one here, of otosclerosis, that I have had under observation for years. One of these was the first case of submucous resection that I ever did—I did not mean to do it. The one on the Pacific Coast hears well, and the one here better than twenty years ago. I think Dr. Shambaugh has touched the key note in the relation of the reflexes originating in the nose and throat in keeping up middle ear disturbances but how to correct them without removing the cause he has failed to tell us. I believe if the condition or irritation is kept up that it will undermine the hearing unless relieved. A human being cannot improve and be at his best physical condition when he is uncomfortable. I think all of these conditions should be corrected. Every source of irritation should be removed, straighten the septum, drain sinuses, clean up the throat, and you will find improved conditions where you least expect them.

Dr. Edwin McGinnis, Chicago: The connection between the ear and naso-pharynx and the nose and throat is the Eustachian tube. Dr. Shambaugh at our last meeting of the Laryngological Society showed that there is little connection in the blood supply between the internal and middle ear, so that obviates any infection from the naso-pharynx to the inner ear,

and that eliminates any infection through the nose. Why do we operate on the nose? Not for the sake of chiseling off spurs. My preceptor used to design instruments for chiseling off spurs. The reason we operate is to get more space in the olfactory region and so get better drainage in the antrum, the ethmoid and frontal sinuses. It seems to me in thinking this matter over, that there is much truth in an article by Dr. Emerson of Boston, who said there was a specific microorganism that attacks the ear. In purulent conditions of the ear there must be microorganism present that will produce pus. We are making a little investigation of the infecting organisms and we find a certain strain of staphylococci that, injected into animals, does not produce focal abscesses. What you get is a round cell infiltration, a spreading of the normal cells, and it seems to me if this goes on indefinitely you might get otosclerosis.

The thing we want to impress on our patients is that in operating on the nose we seek to normalize the nose so that it can take care of itself. In doing this we do not promise our patients too much. The time to operate is when we have enough ear function so that it is not destroyed. I do not quite agree with Dr. Shambaugh that there is not much connection between the nose, the ear and the way we operate upon them.

Dr. O. E. Fink, Danville: In the examination and functional test of large numbers of soldiers both during the war and since, the majority of those who complained of so-called otitis media chronica showed more trouble, in my observation, on the side where there was the largest breathing space than on the obstructed side.

Dr. Harry L. Pollock, Chicago: I believe that all points of irritation in the nose should be removed in the beginning, whether it is a slight spur or slight deflection, but after the pathological changes have taken place in the tube I do not think any treatment is going to affect it if it is purely catarrhal ear trouble. I do not think the changing of the air current has anything to do with the deafness, but think it is a mechanical condition which is set up by the spur or deflection coming in contact with turbinates and the inflammation extends through the Eustachian tube up into the middle ear and in that way we get the secondary contractures. If you take the patient with the first symptoms and operate on the septum—we all know tonsils and adenoids have a good deal to do with the middle ear, and in the secondary contractures we do get results, but after scars have once been formed I do not think any operation on the nose has any effect whatsoever.

Dr. John A. Cavanaugh, Chicago: I thoroughly agree with Dr. Shambaugh that after certain changes have occurred, around the oval and round window, there is not much chance for improvement. Patients with frequent head colds and allowing them to run their course, are the cases that need care. Each of these colds leaves a mark behind, and these cases produce congestion around the oval and round window. If you get these cases early and remove the cause you can benefit the hearing, but after the secondary changes have taken place, improvement is slight, if at all.

Dr. J. Sheldon Clark, Freeport: I think we are too prone to operate on the septum or turbinates in our endeavor to establish free breathing. At the very start, our examination should include the inspection of the vestibule of the nose. If we will do this systematically, ofttimes we will find at the entrance a deflected columnary cartilage, a spur, or that the alae collapse upon the septum and thus close off the space at the anterior naris. Good results in these cases can be had by a simple plastic operation and for this condition of sunken alae, I have found nothing better than the making of an elliptical incision, removing a section of tissue and then placing two or three sutures. This gives excellent results and has the effect of throwing the alae upward and outward and thus enlarging the chamber.

Dr. Joseph C. Beck, Chicago: I want to ask Dr. Shambaugh whether the argument he brings of complete occlusion of the nose is correct from the physical standpoint. The fact that there is no nasal respiration in the new born child is no reason why the ventilation of the middle ear cannot go on by way of the mouth. It is entirely different with occlusion partial or total plus infection or irritation after an individual has had normal nasal respiration. These are cases where the nose plays an important role as to causation of deafness or hard of hearing. We all agree that it is unnecessary to remove septa or other obstruction when the case has progressed too far.

Dr. C. D. Thomas, Peoria: I will not go into the pathology or the symptomatology. The thing that counts is the result we get in our every-day practice. How is the patient pleased? What result have we given him? I do not like to disagree with Dr. Shambaugh. He and I were close friends and students for many months years ago, under Prof. Politzer in Vienna. But an experience of over twenty-five years has taught me that you can get results, good results by proper attention to the distortions in the nares if you do your operative work skillfully and early before the case has progressed too far. I am sure I could accumulate and show case reports of innumerable cases that have been decidedly benefited by proper operations in the nose, removing pressure and giving good ventilation. If we can positively show cures by this procedure, why then should we not believe in it? Practice is far better than theory. I am not willing to desert my cases and say there is no hope as long as my experience shows me that there is.

Dr. George E. Shambaugh, Chicago (closing): It is always interesting to listen to differences of opinion on our every-day problems. Answering the remarks from Dr. Beck: The cases of atresia to which I am referring are those where the occlusion is bilateral and also in unilateral cases. In none of these does there appear to be evidences of middle ear trouble. Tubal occlusion occurs very readily from post-nasal hypertrophy and where such exists, this condition should always receive proper attention. The thing I am objecting to is the

idea which many seem to possess that when a patient suffering from progressive deafness presents himself and it is apparent that treatment of the ear is not going to improve the defect, then one must land on something else, and the nose being nearby, becomes the scape-goat and receives a lot of unnecessary treatment for a defect in the hearing which is not in any way dependent upon nasal conditions.

One hears the statement "Stop the development of ear trouble before it begins," and with this idea many proceed to operate upon the nose. Now here is the situation. At least 90 per cent. of all individuals have more or less pronounced anatomical irregularities in the nasal septum. Not more than one or two per cent. have any middle ear trouble. Does this look as though these irregularities of the nasal septum are an important etiological factor? Not at all. This operating upon the septum under these circumstances is like grabbing at a straw and has been responsible for a deluge of unnecessary, indiscriminate operations.

One speaker referred to a case of otosclerosis on which he had operated twenty years ago and where the hearing today is better than it was before he operated. Now there is but one reply to a statement of this sort and that is that his diagnosis of otosclerosis is incorrect. We all know that the changes that take place in otoclerosis are permanent changes and cannot in any way be influenced by treatment. The one salvation for otosclerosis, as I see it, is to find out more definitely what is the underlying cause and by correcting this, forestall or retard the development of the defect, but where changes have already taken place these are permanent, and no treatment, operations, or otherwise are going to result in an improvement in hearing.

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## CHRISTIAN SCIENCE FROM A MEDICAL STANDPOINT*

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It seems safe to say that the average physician has little real knowledge of "Christian Science." He has been led to regard it as a religion of no great interest to him. On the other hand, it was called a "system of medicine" by its originator, and is now used for the treatment of hundreds of thousands in the United States. This makes it evident that the real character of this "healing art" should be well known by medical men.

History points to the "healing" character of the doctrine from its very origin. In 1861, it is said, a certain Dr. Quimby, who was called a "spiritual healer," received a new patient,—a lady destined to cause a stir in the world. She had suffered for years from a nervous disorder, vaguely described as "spinal" in a letter written by her second husband, who was a travelling dentist. The patient was greatly benefited by "Dr." Quimby. He explained to her how she might lessen her suffering through mental, or rather "spiritual" control. He taught her much about "mind" and "matter" and "disease," and evidently supplied her with many of the terms and ideas that appeared in her texts in later times. She remained his devoted follower for years, until one time when she needed his services, but he could not come, for he was dying. Thrown on her own resources, she found that she could apply the treatment to herself. Upon convincing herself that matter and disease do not exist, she felt that she was "cured," and in this way she laid the foundation for her future prosperous practice.

In spite of these historical events, Mrs. Eddy persistently stated that her system had been derived wholly from the Scriptures. ("Science and Health," Latest Edition, p. 126.) She evidently forgot that the Testament does not discuss "mind and matter," which are the chief topics of Mrs. Eddy's works. It is clear that many of her theories arose from a far different source: From childhood she had ambitiously read serious works, but had tried to master some that proved too deep for her, because she lacked special education. For instance, she read Plato and the Neo-Platonic writers, whom she mentions in her book called "Retrospection and Introspection." These writers, as is well known, discuss "mind" and "matter" at great length, but Mrs. Eddy's mind slipped when she tried to understand what she was reading. A freshman in college philosophy would be "flunked" if he did no better. The Greeks had speculated much about the existence of the world. Certain very early thinkers had suggested, like Mrs. Eddy, that the material world does not really exist. Thereupon, Gorgias of Leontinum, an embassador to Athens in 427 B. C., pointed out that if the world we see and feel is but illusion, it follows that nothing at all exists,—not even goodness or spirit. This conclusion was so absurd that later Greeks, as well as all university trained modern philosophers, have studiously avoided the pit into which Gorgias fell. They have generally been careful to qualify their state-

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ments in a very subtle and technical way when they have contended that in some sense matter does not exist. Evidently this development in Greek philosophy was lost upon Mrs. Eddy, and we find her contending that the world does not exist with a naiveté and seriousness that reminds us of views long antiquated. There need be no doubt that Mrs. Eddy—perhaps unconsciously—took much from the Greeks, for any technical student of philosophy may see at once that she imitates something which is utterly distinctive of Greek thought: Throughout her text, she follows the Greeks in contending that matter and evil and plurality do not really exist, while spirit, intelligence, unity and goodness are the only reality. In short, Christian Science evidently imitates, but is founded on a misunderstanding of Greek philosophy. However, Mrs. Eddy addresses a public that knows no philosophy, and presents her doctrine so obscurely and with so many religious terms that few persons have taken the pains to penetrate its absurdities.

In 1875 Mrs. Eddy published the first edition of "Science and Health." The revised text still remains the gospel of authority for the "Scientist," from which there is no appeal. The quotations that follow are from the latest edition of this work, with one or two exceptions, and will be used to present her beliefs so far as possible in her own words.

The essence of what Mrs. Eddy teaches can be stated in a paragraph: "All that God made is good, and he made all. Hence evil is not made and is not real." (311.) "Suffering, sinning, dying beliefs are unreal." (76.) ". . . . Error, sin, sickness, disease, death—is the false testimony of false material sense." (108).

Many statements by Mrs. Eddy make clear not alone that she denies disease, but also that she considers everything else in our daily world an illusion. She believes that the human mind as well as the human body does not really exist. She points out that physicians "are ignorant that human mind and body are myths." (150). Flowers, landscapes, men and women are products of the so-called mind, are images which simulate mind, life and intelligence. (71). "Heat and cold are products of mortal mind." (374). Matter is not actual. (110). "Mortal existence is a dream of pain and pleasure in matter, a dream of sin, sickness, and death; and it is like the dream we have in sleep, in which everyone recognizes his condition to be wholly a state of mind." (188). "If you or I should appear to die, we should not be dead. The seeming decease, caused by a majority of human beliefs that man must die, or produced by mental assassins, does not in the least disprove Christian Science." (164).

Mrs. Eddy does not believe in physiology: "Sound is a mental impression made on mortal belief. The ear does not really hear." (213). Likewise she denies disease, precisely as she denies the existence of everything else in the physical and mental world of our everyday life. "What is termed disease does not exist." (188). "You say a boil is painful; but that is impossible, for matter without mind is not painful. The boil simply manifests, through inflammation and swelling, a belief in pain, and this belief is called a boil. Now administer mentally to your patient a high attenuation of truth, and it will soon cure the boil." (153). "It is—erroneous to believe in the real existence of a tumor, a cancer, or decayed lungs." (395). "We have smallpox because others have it; but mortal mind, not matter, contains and carries the infection." (153). If a person swallows poison through mistake and dies, does human belief cause this death? Yes. For the vast majority of mankind, though they know nothing of this particular case and this particular person believe the arsenic or strychnine to be poisonous. Even though the physician and the patient are expecting favorable results, the actual result is controlled by the majority of opinions, not by the infinitesimal minority of opinions in the sick-chamber. (177). "A child may have worms, if you say so." (413).

Mrs. Eddy is vehement in her criticism of the practice of medicine: "Mortal belief is all that enables a drug to cure mortal ailments." (174). "When the sick recovers by the use of drugs, it is the law of a general belief,—which heals.—The chemist, the botanist, the druggist, the doctor and the nurse equip the medicine with their faith, and the beliefs which are in the majority rule." (155).

It is not generally realized how much Christian Science is opposed to the principles of hygiene: Mrs. Eddy preaches against baths, fresh air, diet and exercise in the treatment of ill health. "The less we know or think about hygiene, the less we are predisposed to sickness." (389). "When—less thought is given to sanitary

subjects, there will be better constitutions and less disease." (175). "We hear it said: 'I exercise daily in the open air. I take cold baths, in order to overcome a predisposition to take cold; and yet I have continual colds, catarrh and cough.' Such admissions ought to open people's eyes to the inefficacy of material hygiene, and induce sufferers to look in other directions for cause and cure." (220). "The daily ablutions of an infant are no more natural nor necessary than would be the process of taking a fish out of water every day and covering it with dirt in order to make it thrive more vigorously in its own element.—Water is not the natural habitat of humanity. I am not patient with a speck of dirt; but in caring for an infant one need not wash his little body all over each day—" (413). It is contradictory to suppose that food has the power to destroy life through a deficiency or an excess, a quality or a quantity. (388). "In seeking a cure for dyspepsia—eat what is set before you,—" (222).

Treatment by Christian Science consists in making the patient see the Truth. "If your patient believes in taking cold, mentally convince him that matter cannot take cold, and that thought governs this liability." (377). "To prevent disease or to cure it, the power of Truth, of divine Spirit, must break the dreams of the material senses. To heal by argument, find the type of the ailment, get its name, and array your mental plea against the physical. Argue at first mentally, not audibly, that the patient has no disease, and conform the argument so as to destroy the evidence of disease. Mentally insist that harmony is the fact, and that sickness is a temporal dream. Realize the presence of health and the fact of harmonious being, until the body corresponds with the normal conditions of health and harmony. (412).

"If the case is that of a young child or an infant, it needs to be met mainly through the parent's thought, silently or audibly on the aforesaid basis of Christian Science." (412). "Science can heal the sick who are absent from their healers, as well as those present, since space is no obstacle to Mind." (179). "The author has cured what is termed organic disease as readily as she has cured purely functional disease." (149). The Christian Scientist, she adds, should not limit his practice to hysteria, hypochondria and hallucination. Truth handles acute disease or the most malignant contagion with perfect assurance. (176). For the present, Christian Scientists may call in surgeons, at least for the adjustment of broken bones and of dislocations, although Mrs. Eddy states that she and her students have already cured even such cases. (401). It also would be permitted to have assistance under the following conditions: "If from an injury or from any cause, a Christian Scientist were seized with pain so violent that he could not treat himself mentally,—and the Scientists had failed to relieve him,—the sufferer would call a surgeon, who would give him a hypodermic injection, then, when the belief of paint was lulled, he could handle his own case mentally." (464.)

The results of treatment by Mrs. Eddy's method are illustrated in a chapter headed "Fruitage." Cures are claimed for such various conditions as rheumatism, astigmatism, hernia, insanity, epilepsy, fibroid tumor, cancer, cataract, valvular heart disease, Bright's disease and tuberculosis. Further instances of numerous cures up to date are reported in a current journal which is supplied gratis to "Scientists."

In financial matters, Mrs. Eddy evidently had a distinct advantage over ordinary practicing physicians: She reports that she was assisted in making out her bills by the Deity. "When God impelled me to set a price on my instruction in Christian Science Mind-healing, I could think of no financial equivalent for the impartation of knowledge of that divine power which heals; but I was led to name three hundred dollars as a price for each pupil in one course of lessons in my college,—a startling sum for tuition lasting barely three weeks. This amount greatly troubled me. I shrank from asking it, but was finally led, by a strange providence, to accept this fee." (From Mrs. Eddy's book, "Retrospection and Introspection.")

How can the spread of Christian Science be explained? Evidently it must contain something that makes a strong appeal to the masses. Other religions have generally attracted their following by promises of happiness in a future life; but Christian Science offers the credulous something more immediate,—freedom from ills right here and now. Indeed no religious doctrine has ever been more liberal with its promises, or suggested so easy a path for the attainment of everything the heart and intellect may

desire. For the believer is taught that if he will read and understand Mrs. Eddy's book he will acquire the sum total of valuable knowledge, will "know the past, the present, and the future," (84) and will secure perfect health. Furthermore, in her methods of attracting the public, Mrs. Eddy showed a business genius that rivals a Rockefeller. She established a board of directors with newspapers, free lectures, testimonial meetings and a widespread system of advertising among individuals from mouth to mouth. She saw to it that all net profits should be duly invested, not in charities, but in the further advancement and spread of her organization. She provided a livelihood for myriads of "healers" and an attractive mode of life for the believing public in the form of handsome temples with music and reading on a Sunday morning. All this is offered for small sums of money,—for charges less than are made by the average practicing physician.

How shall we explain that thousands of persons report benefit or cure through Christian Science? Doubtless some cases of improvement are genuine. As Dr. Emil G. Hirsch very well remarks, a certain admixture of truth or goodness may make a great falsehood all the more plausible and dangerous. Physicians realize today far more than in years past that a favorable state of mind may promote health to a certain extent. Such a state of mind is sometimes brought about in Christian Scientists by means of what is known among physicians and psychologists as "suggestion." By suggestion is meant the arousal of the belief of the patient that he is well or will become so. A second factor in the production of "cures" evidently is the quiet and contentment that may come to the individual when he ceases to believe that he is or can be ill. Lines of worry become relaxed, and the typical Christian Scientist bland faces results. It need not be doubted that systematic repetition that illness and misfortune do not exist has a sedative influence on those who listen sympathetically. A third way in which Christian Science influences is through the diversion which the ailing individual may derive from preoccupation with religious matters.

It is obvious, however, that the lay public, when crediting Christian Science with innumerable cures, fails to take into account sundry facts: 1. Christian Scientists often remain ill, but are trained to deny it. Evidently it is quite absurd to accept the testimonies of Mrs. Eddy's followers that they have been made well, for they have been taught with parrot-like repetition to say that illness does not exist. Their minds are no longer open. 2. Many individuals with imaginary ailments may cease to imagine, and claim a "cure." 3. Many ailments run their natural course and then disappear, whereupon the result is wrongly accredited to Christian Science. 4. Christian Science may get credit for false cures just as any well advertised patent medicine gets credit from a large following. 5. Laymen cannot diagnose accurately nor tell when they are cured. 6. The testimonials of Christian Scientists generally are subjective reports. Laboratory tests are lacking. Such evidence has no scientific value. However, laymen seldom realize this, for they usually rely upon their friend for judgments and recommendations in medical matters. They do not appreciate that well trained physicians regard attempts to prove by testimonials as farcical. The public also needs to learn that hearsay diagnosis is worthless: to convince a scientific reader that a case of cancer, for instance, has been cured requires certain evidence that it really was cancer. It would not be convincing to record that some patient or doctor said it was cancer, but it would be necessary to have a microscopic examination made before and after the treatment by a competent pathologist. This of course is not done in Christian Science cancer "cures."

It is sometimes argued that the popularity of Christian Science proves that there must be some good in it. Perhaps this is true, but the same type of reasoning would prove that there is good in vice, crime, morphin addiction and many other recognized evils of society. Clearly, the medical value of Christian Science for the public is that it applies optimism and a form of therapeutic suggestion to the treatment of disease. Of course such treatment might be better performed by properly trained physicians. The average physician probably does not realize how much harm Christian Science is doing. It leads toward dangerous neglect of drugs, surgery and hygiene. An example was a recent autopsy at County Hospital, following a dinner with fungi mistaken for mushrooms. The dead individual was a Christian Scientist who had refused to undergo the catharsis that saved other members

of the family who partook of the same poison. The use of Christian Science in functional nervous disorders is particularly to be condemned, since it cultivates a state of delusion, in which the realities of the external world are denied. Preference of delusion to facing the pains and trials of life, as is well known, occurs likewise in the insane. If this point of view is correct, Christian Science carries with it the menace of intellectual degeneration.

It will not be necessary to point out the contradictions and absurdities in Mrs. Eddy's writings, since scientific readers will find them obvious.

From the progress of Christian Science among the laity, several morals may be drown: 1. There is need of increased study of experimental psychology applied to medicine. 2. Medical men generally should take greater interest in community concerns. Every effort should be made to increase the average of medical competency, to avert inadequate medical preparation, and to weed out quackery and cults. 3. Accounts of advances in medicine and surgery should be conveyed to the public by lectures and articles. The public has the right to be educated.

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## THE PHYSICIAN AN IMPORTANT FACTOR IN PUBLIC HEALTH PROBLEMS IN ILLINOIS*

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(A Posthumous Paper)

A State Health Department without the cooperation of the doctors will be about as useful as a manufacturing establishment with a complete office force, and all the machinery and equipment necessary to carry on a successful business, but with no other employees.

A department of health has a variety of avenues in which its energies and activities are expended, but all center around the one feature—prevention of disease.

The traditions of the medical profession link it with the same fundamental principle. All the experimental research carried on by the profession has been tending to the prevention or cure of disease, with the stress upon the former.

With these self-evident truths before us we are in a position to indicate why and how the physicians can aid the Health Department of Illinois.

As a collateral aid in the work of disease prevention "Birth registration" is required, and in this important service the doctor is the principal agent. It is from him we expect to receive all the information required to meet every individual need. This information is of value to the individual in many features.

It establishes identity, legitimacy, nationality, school age, first employment age, voting and marriageable age; the age at which one may inherit and hold real estate in his own name, and the age when one may enter the military or naval service, or be exempt therefrom. It enables one to obtain passports to travel in foreign countries, and to trace ancestry. In the last analysis the attendant at a birth owes it to the helpless child to secure for it all the above named advantages.

The prompt and earnest co-operation of the physician, then, will aid the department of health to assure to the citizen all the benefits to which that citizenship entitles him—or her.

As a further duty to the child we may well insist that no harm may come to it through its food, and to this end the physician may prove of inestimable value by insisting that the milk, the chief food of the young child, shall be pasteurized. In this way a very large element of the danger from a possible tuberculous cow in the herd supplying the milk may be eliminated. Where the unpasteurized milk is sold a "home pasteurization" may be very efficient.

But little need be said upon the importance of vaccination as a preventive of smallpox. The public is quite generally enlightened upon this question, though there are a few persons found in every community whose misinformation and prejudice lead them to oppose it. Doctors can help to overcome this unfounded prejudice and dangerous opposition.

Every physician can be of material aid to the department of health by promptly reporting any case of communicable disease coming under his observation. He can do much more than this; he can instruct the family as to the best way of caring for the sick in order to protect others from infection. He is on the ground ahead of the health officer. He can provide for the isola-

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tion of the patient and warn the family of the danger of additional exposures. He can do much to allay a spirit of antagonism toward quarantine.

Very few persons are aware of the fact that there are more than 1,000 deaths from diphtheria in Illinois each year. This, in spite of the well-known fact that early treatment with antitoxin will almost invariably cure.

The remedy for this condition is to be found in an active propaganda by the doctors for the inmunization of all children under six years of age by use of toxin-antitoxin.

There is no longer any question of the efficiency of toxin-antitoxin, and if all children are inmunized the danger from "carriers" is eliminated.

It may be news to some that doctors often neglect to receipt for the antitoxin which is furnished free by the State. This neglect causes much needless labor on the part of the State Department of Health, as each and every package must be accounted for in some manner.

There is one other suggestion to be made, one that might seem needless, but which nevertheless is important, that is to write the birth and death certificates with more care. It is not enough that it is so written that the physician knows at the time what it is, but also that he might read it at a future time, or so that one not familiar with his peculiar chirographic qualities might read it correctly.

The copying of over 7,000 birth certificates from "originals" calls forth the above suggestion. These are permanent records and should be prepared in the most careful manner.

## DISCUSSION

Dr. Anna Hinds, Berwyn: I wish there were some way of making people understand the importance of registering the births of their own children.

Dr. Lillie seems to assume it is our duty, and it is as things have gone. The obligation is wrongly placed. I do not know that we can do anything with it, but it should be of more importance to the parents than it is to the physicians.

Dr. C. O. Schneider, Winnetka: The attitude taken by some physicians in the matter of reporting births and contagious disease, is the most serious crime that the health officer has to combat. Many doctors fail to realize their legal obligations to the state and municipality where they are practicing medicine, and they feel it to be an irksome and unwarranted duty that the physician should be the one that is obligated to report all births and contagious diseases. This is, and should be the duty of the doctor, and it must be attended to more thoroughly, accurately and promptly than is being done at the present time.

The doctor's interest in the welfare of humanity should be so broad that the greatest good to the community at large is always paramount, instead of merely considering the welfare of the family group that pays the fee.

As an evidence of neglect in reporting communicable disease, it comes about quite frequently that the State Health Department receives death certificates with cause of death given as pneumonia or some other reportable disease, and no such case of illness had been reported to the local health officer. Such evidence of negligence on the part of the doctor should not be repeated without more serious consequences than a mere reprimand.

Dr. R. E. Logan, Galena: I am a new member in this section, having only been interested in public health in the last year.

I live in a section of the State in which public health questions are almost tabooed. I believe that the trouble with the average doctor in the community is this: The specter of state medicine has been affecting most of the doctors throughout the United States and they have a great deal of doubt; a great many not well informed on public health questions, believe that when the public health physician steps into the community from the State Board of Health, they are going to lose their jobs.

Dr. C. W. Lillie, East St. Louis (closing): The point raised by Dr. Hinds is a proper one indeed; that of educating the people themselves to realize the importance of birth registration. Who but the doctor can do that? Only the doctor and the midwife and those that come in contact with those people can do it. It is up to the doctor, and he has been the educator in everything pertaining to the public and general health. He has been for centuries, and he must continue to be.

It is not only that I am urging upon him the importance of doing this in the matter of birth registration but as an aid in the reporting of communicable diseases to the Department of Health.

If I were discussing from the mere point of view of the duty to the public in these matters, I could say a great deal more and could take up a great deal of time that might perhaps be better used by this section in some other way.

It is a burning subject with me, that of the ignorance of the public regarding their own duties and obligations to their neighbors and their friends and to the State and to the Nation, they are neglecting because they are ignorant of what it really means.

Before the recent war very few people took any especial interest in having births reported. They had not been called upon for a long time to secure a certified copy of a birth record. And when the war came on, and it was found that a great many wanted to keep out of the war and others wanted to get into the war, it was found necessary to have some record of births and they began to get busy.

Now, since the Federal Government is aiding some

of the ex-soldiers in proportion to the number of children they have, they must give a complete record of the births of all children, and they are getting very busy on that.

Very much more interest is shown now in birth registration than there ever was before. These are some of the points that the public are really more interested in than the physician is.

Physicians should be interested in everything pertaining to public health, and birth registration is only one of those features.

## PARAVERTEBRAL ANESTHESIA IN ABDOMINAL SURGERY.*

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This paper is not concerned with the anesthesia produced by local infiltration as advocated by Reclus, Schleich, Crile, Harris and others, but seeks to gain your interest in the widened scope of injection anesthesia in abdominal surgery, attained by locking the spinal nerves supplying the field, at their points of emergency from the intervertebral foramina.

As has been clearly demonstrated by Braun, Finnisterer, Pauchet, LaBat and others, this method eliminates many of the objections of local anesthesia, and gives a wide field of safe and complete anesthesia, not only of the abdominal wall, but of those viscera supplied by the nerves injected. It is more difficult to apply than spinal anesthesia, but without its dangers.

The literature is well supplied with an array of facts and theories sufficiently convincing to convert the most doubtful. Technical points are difficult to find, however, and it is the purpose of this paper to state plainly, to show clearly by few slides the technique of applying paravertebral anesthesia by a method that we have found highly satisfactory.

### TECHNIQUE

*Nerve Supply:* The operator must have a practical knowledge of the distribution of the lower six dorsal and upper lumbar nerves. As shown by the diagram, the stomach is supplied by the 6, 7, 8, and 9 D. nerves. The liver and bile tracts by the 6, 7, 8, 9 and 10 D. nerves. The intestines by the 10, 11, 12 D. and 1, 2, L. nerves. The kidney and ureter by the 10, 11, 12 D. and 1, and 2 L. nerves. The testicle and ovary by 10, 11, 12D. and 1, 2, 3, L. nerves. The uterus by the 10, 11, 12D. and the lumbar and sacral plexes.

*Solution Used:* Novacain in sterile ampule form dissolved in distilled water to make a 1 per cent solution. Three drops of one to one thousand adrenalin solution is added to each ounce. The solution should be freshly made and never boiled. Seven to eight mils is used for blocking each nerve.

*Location of injections:* A pencil line is drawn parallel with the middle line and 3½ centimeters from it. A skin bleb is made with a very fine needle on this line and opposite to each spinous process. A lanced pointed 21 gauge needle three inches long is inserted through each bleb until it touches the transverse process or rib. It is then slightly withdrawn and the angle changed to graze the lower margin of the rib, and its progress terminated one-half a centimeter beyond. The syringe is applied, and moving the point slightly to and fro, seven or eight mils are injected. If the injection is too far from the middle line, the sympathetic gangelion will not be affected and anesthesia of the viscera will not be complete. If blood flows from the needle intravenous injection may be made with toxic symptoms and no anesthesia resulting. If the needle be too deeply inserted intrapleural injection may occur with no anesthesia resulting.

The lumbar nerves are injected in like manner, the needle grazing the lower edge of the transverse process. In this location the number of the nerve is one less than the spinus process opposite, as seen in the diagram. After the third lumbar the injection must be made very near the body of the vertebra, if the sympathetic branch is to be affected.

For strictly unilateral operations only the nerves of one side need be injected. The anesthesia stops at the mid line, however, and when incision is in the mid line, or mid line viscera like the stomach or pancreas are to be manipulated, bilateral injection of the nerves must be made.

Let us now apply the technique for removal of the gall bladder. As for inhalation anesthesia, morphin 1/6 grain with scopalamin 1/00 grain, is injected one-half hour before the nerve block. The right dorsal nerves from the 6th to the 12th are injected as described above. The injection should be made in the patient's room and are somewhat easier to do with the patient in the

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sitting position. Fifteen minutes after the injections are made, the patient is taken to the operating room with eyes covered with a cold cloth. The room must be well ventilated and silent technique observed throughout the operation. It is not advisable to converse to the patient but an assistant should be free to answer his questions, etc. In other ways the operation is performed as with general anesthesia. No infiltration of the skin is necessary if the injections have been perfectly made, but it is advisable to do until a moderate experience has been attained. Sharp dissection, gentle handling, minimum traction are desirable. If the patient complains of nausea or discomfort when the operator finds it necessary to go beyond the field of block, or when the block has been imperfectly made, any viscera can be rendered insensitive by the injection of a small amount of solution in its mesentery. If sensation is evidenced when the cystic duct and artery are clamped and ligated, as sometimes occur when the injections have been faulty, a small amount of solution should be injected in the space behind the cystic duct and between the gall bladder and liver. A willingness to add an intra abdominal regional injection will often convert a partial failure into a complete success.

The pylorus and duodenum can be operated on with the above technique, but if the pars media is to be manipulated, bilateral injections should be made.

Appendectomy requires injection of the 9, 10, 11, 12 D. and 1, 2, I. lumbar nerves. Here a partial success may be rendered complete by injecting the space behind the head of the cecum. There should be no nausea nor distress felt about the naval, if the injections are complete.

Nephrectomy or nephrotomy is an ideal operation for the application of paravertebral anesthesia. By injecting the 10, 11, 12 D. and 1, 2 L. nerves we recently removed a large tumor of the right kidney measuring 6 x 9 inches without discomfort of any kind to the patient.

Although herniotomy lends itself well to regional block of the ilio-inguinal and ilio-hypogastric nerves, the large variety are much more comfortably handled by paravertebral injection of the 11, 12 D. and 1, 2, 3, 4 L. nerves.

Due to the extensive nerve supply of the pelvic organs the number of injections are too numerous for a practical application of paravertebral anesthesia. We prefer in this field a combination of local infiltration of the abdominal wall and sacral block.

## DISCUSSION

Dr. John R. Harger, Chicago: I have listened with a great deal of interest to what Dr. Lowry said and also to the paper read in the early afternoon on the subject of local anesthesia for Caesarean section. For a number of years I have been interested in local anesthesia. Of course, regional anesthesia and paravertebral anesthesia are an outgrowth of the original so-called local or infiltration anesthesia. In the earlier days we were taught that the only indication for local or regional anesthesia was some contra indication to general anesthesia. At the present time I think it is quite well conceded that the indications for local anesthesia are those conditions or operative procedures which can well be carried out under local anesthesia. I would say from my experience and from what I hear from the other men a great deal of the major surgery that is done today can be safely carried out under local anesthesia.

Now, there are a number of things that are essential to a safe and sane method of local anesthesia. The first one is the confidence of your patient. The idea prevalent in the mind of the average individual that if he is going to be cut he is going to be hurt you have to obliterate to begin with. Another thing is the extreme irritability of the patient that is present when some operative procedure is to be carried out. If you have a highly intelligent patient, one well open to reason, that irritability can be overcome with mild persuasion. Local anesthesia, in most work, is practically without danger. Our present preparations, the novocain and apothesin, are practically harmless and when the injection is made into the area immediately around the operation or a block operation I think it is practically without danger. When it comes to regional anesthesia or paravertebral anesthesia or any other anesthesia where you seek out the nerve trunk for injection, I cannot convince myself that it is free from danger. We know this, that there is no tissue in the body that is quite as sensitive or as easily traumatized as nerve tissue. When we are using a needle in local anesthesia, and it reaches the region of the nerve we inject around it; if we strike the nerve trunk and infiltrate immediately into the nerve, I am not sure that there is not going to be some permanent effect upon this nerve. Many reports of such have been made. Braun has called attention to the fact that nervous irritability, collapse, and other conditions have occurred immediately following local anesthesia.

The description Dr. Lowry has given us is certainly a very good one. I can see it is not only easily carried out unless you acquaint yourself with the anatomy. However well you may be be acquainted with the anatomy it carries with it a certain lack of precision. You cannot see exactly where the point of that needle

is, whether in the nerve or in the region of the nerve. That it has any advantage over a thorough primary narcosis with morphin and scopolamin followed by regional infiltration I am greatly in doubt. We know this; that gall bladder work, gastro-intestinal work and gastric-anastomosis have been done under primary injections of 1/6 morphin and 1/150 scopolamin one hour before the operation and then followed by infiltration of the abdominal wall with very good results. That this paravertebral work with its tedious technic has any advantage over that I am still in doubt. The principal points in the success of all regional work is confidence of your patient and primary narcosis, in other words, to overcome the nervous irritability that the patient is bound to suffer from. Unless that is done, you are not going to meet with success. It takes, however, in local anesthesia a great deal of patience and persistence on the part of the operator because a great majority of us have been taught in the past that when we are ready to cut, the patient is fully anesthetized. With this method we have to spend fifteen or twenty minutes in preparing our patient before we begin to operate.

Dr. Robert Emmett Farr, Minneapolis: I am glad indeed to have had an opportunity to hear this excellent paper and discussion. I regret that those of us who are interested in local anesthesia are compelled to take issue with each other upon details when speaking before various audiences, and incidentally have them get the idea that we are quarreling among ourselves. For instance, Dr. Lowry states that he is not discussing local anesthesia. It seems to me that paravertebral anesthesia is as much a part of local anesthesia as is sacral anesthesia. The sacral anesthesia Dr. Lowry describes I would call trans-sacral anesthesia rather than para-sacral anesthesia. I began my work under local anesthesia using the regional method. So far as I know Pauchet and his school are about the only ones who have stuck to the method. Professor LaBat who came to Rochester and spent a year showed this method. At the conclusion of a lecture which I gave upon local anesthesia before the Mayo Foundation Dr. Wm. J. Mayo stated that while conduction anesthesia was a beautiful method in the hands of an expert, he felt that the infiltration or simpler methods would work out better in the hands of the general surgeon, through whom local anesthesia must ultimately reach the patient. Those who have observed the work of experts in regional anesthesia will agree with me, I think, that anesthesia is frequently incomplete. The objection offered by Dr. Lowry that the dosage of novocain is necessarily larger when infiltration anesthesia is used loses much of its weight when we consider that Pauchet, Kappis and others recommend between two hundred and four hundred cubic centimeters when establishing paravertebral. Infiltration anesthesia rarely demands doses as large as this. Furthermore toxicity has been much more commonly observed where paravertebral anesthesia has been established, especially in the region of the neck.

First of all we desire safety, but we also want speed and we wish to eliminate the irksomeness which has been connected with the use of local anesthesia. We want methods which the young men will learn quickly and that general surgeons will use. I have no quarrel with the men who use nerve blocking, but I agree with Hertzler that spearing for nerves is a difficult thing and that the best of us will miss them now and then. Paravertebral anesthesia has disadvantages from the psychic standpoint. The most ideal method is to lay your patient upon the table, introduce your anesthesia and begin your operation at once. With the proper technic and equipment this method may be carried out.

I wish to make a plea for simplicity in the use of local anesthesia. Make it just as simple as you can and make it possible for the general surgeon to grasp the method without too much expenditure, and bring local anesthesia to the patient. This I believe is the crux of the whole problem.

Dr. Hugh N. MacKechnie, Chicago: A glance at the program gives an impression of the importance of this subject in the minds of surgeons today. Three out of fifteen papers assigned to local anesthesia is a very high average. The variety of topics indicates the varied applicabilty of the method. This varied applicability however, does not necessarily indicate easy applicability nor that one should use the method indiscriminately or without due consideration. If one were to get any such impression it would be merely to lead the method into a certain amount of disrepute and that would be most unfortunate. There are certain factors to my mind which must be considered in connection with local anesthesia, whether it is purely local or whether it is block anesthesia or whether it is paravertebral or intraspinous. First, one must have confidence in oneself and one's ability. This confidence must not be based on the simple willingness to do work but on real knowledge—a knowledge of the adaptability to the particular case and a knowledge of its applicability. This confidence in oneself naturally leads to a second point, the confidence of the patient which is very essential for a successful execution of an operation. Lack of confidence on the part of the patient develops a nervousness with movements and an unwillingness to cooperate at critical times, and this may lead not only to inability to complete the operation but to unfortunate results in the individual case. Third, a rather definite knowledge of the nervous anatomy of the part, both of the peripheral and sympathetic systems is essential. We should apply this knowledge for an exact location of these organs. Fourth, a well developed operating room technic in which nurses work quietly, talking is minimized and the handling of instruments is done without noise or confusion. Any infringement of these rules tends to produce uneasiness on the part of the patient and thereby upsets the easy completion of the operation. Fifth, nimbleness of the fingers and lightness of touch are extremely important. I have a rule which I repeat frequently in the operating room which

applies to any surgical procedure, but it is much more essential in the case of local anesthesia than it is in general. It is this, "handle your patient as if he were able to recognize local insults and able to defend himself against the same," that is, we should not take advantage of our patient even if we have him at our mercy and we should always remember that sub-conscious shocks are frequently more injurious than are conscious shocks. I believe that a more intimate knowledge on the part of the lay people with this safe and sane method would lead to a more frequent use of paravertebral anesthesia.

Dr. N. H. Lowry, Chicago: (closing the discussion) The points made by Dr. Harger and Dr. Farr are very well taken. The objections to paravertebral anesthesia can be easily overcome by study of the anatomy and a little work on the cadaver with color solutions and all those things that are necessary to build up the surgical technic of any new procedure. The advantages of paravertebral anesthesia are conceded: A small amount of solution is used to gain a wider field and more complete anesthesia. There is no local destruction of tissue. There is no interference with local circulation and there is no interference with healing. Of course, all the advantages of local anesthesia are conceded. We have enjoyed them and practiced them for a long time, but after you have reached the limit of local anesthesia you gradually get interested in regional and paravertebral. We expect to see all anesthetists of the local method becoming more enthusiastic over paravertebral as they progress with it.

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## A MACROSCOPIC URINE PRECIPITATION TEST FOR ACTIVE TUBERCULOSIS*

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PEORIA, ILLINOIS

The early diagnosis of the tuberculous lesion still remains a difficult task. Research has brought us some nearer to the discovery of the period at which the disease first becomes established, but the initial stage of the primary infection is still to be determined. The lesion of the tubercle bacillus is not discovered until the disease is well established. Biologic tests have proved to be unsatisfactory. Recent works have had for their object the determination of the presence of active foci and, though of value, are not very dependable.

Some months ago, I had the good fortune to read a reprint of Wildbolz' original work on his autourine test. His findings warranted his conclusion that the tubercle bacillus antigen was excreted in the urine. It occurred to me that since the author had shown fairly conclusively that the urine of tuberculous patients contained antibodies, it was logical to conclude that these same antibodies might be used to demonstrate a precipitation of tubercle bacilli outside of the body.

With this object in view, I have obtained some 250 specimens of urine in the hope that the data would be of service in diagnosing incipient tuberculous lesions.

I recall the words of William Osler, who said, "The early diagnosis of pulmonary tuberculosis is of such vital importance to the patient that *every possible means* should be used to recognize the disease before it has made much headway." The possibility of perfecting a precipitation test for tuberculosis has appealed to the writer as a possible means of diagnosing early tuberculous lesions and amply justifies the task attempted.

We are all familiar with the agglutination phenomenon as shown in the Widal test for typhoid. Since agglutinins are specific, we should also have antibodies appear in the urine when the body is combating phthisis. Like the eminent Swiss physician, "I know how daring it is to recommend any diagnostic methods for practice which depend upon biological development which in themselves are not clear." It occurs to the author that since the urine of actively tuberculous persons contains immune bodies of sufficient strength to produce a skin reaction, we may assume it contains agglutinins which are capable of coagulating or precipitating tubercle bacilli. Since this agglutination may be made more easy of interpretation by accomplishing it in the gross, I have followed such a course.

The object of this test is to differentiate active from arrested cases. The proof positive of pulmonic tuberculosis is by finding the bacilli in the sputum. In using the precipitation test corroboratory evidence is furnished in addition to laboratory findings, physical examination and clinical observation. In order for this test to be practical, it must be useful in tuberculosis of other systems than the pulmonic. The involvement of the nervous, osseous, gastro-intestinal, and the genito-urinary systems, as well as the pulmonic should show positive results despite a negative sputum. These antibodies being developed in the blood are necessarily produced to

*Read before the Peoria City Medical Society, Sept. 1, 1922.

excess. The overflow is excreted in the urine. When all the body defence is broken down, the white cells no longer produce agglutinins and the urine is now free from them. While the body is combating the disease, they are excreted in the urine and may be demonstrated by the precipitation test.

Since it has been shown (Parke) that sodium chloride must be present before agglutination can occur, a series of tests were made to determine in what dilution this agglutination occurred most readily. The maximum reaction was shown when equal quantities of saline and urine were used. In further observations, this technique was followed.

In introducing a loopful of tubercle bacilli, there was considerable variation in the number of bacilli introduced, therefore, a homogeneous mixture of the bacilli in saline was used and one drop of a well shaken emulsion was added.

To prevent the contamination of specimens, the urine was obtained, in most cases, in the following manner: Males were requested to sponge the genitals with soap and water. The first part of the specimen was rejected since it may have been contaminated by bacteria and extraneous matter in the first part of the urethra. The last portion is caught in a sterile container, corked and labelled. If unable to void, the patient may be catheterized but the same precaution should be followed to obviate contamination. Females are requested to cleanse the parts before voiding. A specimen is caught in a sterile pan and transferred to a sterile container at once. Catheterization is the preferable method but many are averse to such a proceeding.

The technique of the test is as follows. Equal quantities of sterile normal saline and suspected urine were placed in a sterile test tube which previous to dry sterilization had been plugged with cotton. It was then incubated at 38 degrees centigrade for 8 hours to determine whether it had been contaminated. If such was the case, the urine became turbid. If, however, the specimen had not been contaminated, the tube remained clear. A drop of tubercle emulsion in normal saline was added. The tube was then shaken vigorously and again incubated for 8 hours or kept at room temperature for twenty-four hours. It was then placed in the refrigerator for one hour after which it was read.

If the specimen was clear with a precipitate at the bottom of the tube, it was considered POSITIVE since the agglutinins in the urine were able to coagulate the bacilli introduced. If, however, the tube was turbid or opalescent, it was considered NEGATIVE. There were no antibodies capable of precipitating the tubercle bacilli.

Conflicting results were obtained by investigations of the auto-urine test. This was true in cases which had previously received tuberculin medication. Such treatment can only cause an exaggerated reaction in the precipitation test. The increased antibody production only causes a more marked agglutination of the bacilli.

Most of the specimens obtained have been received in the course of routine life insurance examinations. I am indebted to the profession for assistance in obtaining data upon their patients, also to the management of local sanitaria for their hearty cooperation.

The following is a general survey of the data obtained.

| | |
|---|---|
| Number of Specimens Tested | 253 |
| Number of Positive Reactions | 95 |
| Number of Negative Reactions | 158 |

POSITIVES

| | |
|---|---|
| Manifest Tuberculous Findings | 68 |
| Suspected Tuberculous Findings | 16 |
| No Signs of Tuberculosis | 11 |

NEGATIVES

| | |
|---|---|
| Manifest Tuberculous Findings | 6 |
| Suspected Tuberculous Findings | 0 |
| No Signs of Tuberculosis | 152 |

Negative specimens were obtained in the following diseases:

| | |
|---|---|
| Syphilis—(Initial Stage) | 1 |
| Dementia Precox | 4 |
| Mental Defective | 1 |
| Cystitis | 1 |
| Glycosuria | 2 |
| Albuminuria | 4 |
| Intestinal Carcinoma | 1 |
| Mitral Regurgitation | 3 |
| Typhoid | 1 |
| Chronic Bronchitis | 2 |
| Acute Bronchitis | 3 |

Positive Reactions in the following:

| | |
|---|---|
| Pulmonary Tuberculosis | 68 |
| Persistent Diarrhea | 2 |
| Non-Specific Urethritis | 1 |
| Asthma | 1 |
| Influenza | 2 |
| Pernicious Anemia | 1 |
| Abdominal Pain | 2 |
| Bronchitis | 7 |
| No Signs | 11 |

The chief source of error is contamination. This may occur at the time the specimen is voided or even until the test is made. Even if the specimen is sterile it may be contaminated by a dirty container. For this reason, the specimens were all procured in sterile bottles and aseptic precautions used in making the test. Since the age of the urine may affect the reaction, especially if no preservative has been

added, two grains of boric acid were added to a two ounce bottle of urine.

I have kept specimens at varying temperatures from 38 degrees centigrade to ice-box temperature for periods from one to sixty days and have found that where a preservative, such as boric acid, is used, the urine retains its reactions for twenty-two days. Since this period of time is more than sufficient for sending it through the mails, it is sufficient to note that it gives the reaction for so long a time.

Over-incubation also vitiates one's results. Eight hours is ample incubation.

As has been mentioned, another source of error was the use of too large and an inconstant amount of antigen. In introducing a uniform amount, more uniform results were obtained.

The use of the various forms of preservatives has also affected this reaction. Formalin was not found practical since it inhibits the reaction. Chloroform was unsatisfactory because of its volatile properties, while camphor and thymol could not be depended on because of their low solubility and weak germicidal powers.

All other tests so far offered are difficult to perform and require an expert to read the reactions when they are obtained. Another objection is that special laboratory equipment is necessary. It is necessary in most instances to have the patient present but in this case one does not have any difficulty in obtaining a specimen since a few simple directions which most anyone can grasp are all that is needed.

The data I have presented indicate that wherever a precipitation of the tubercle bacilli occurs, there is a suspicion of an active phthisical focus present.

In 92 per cent of all cases which were unmistakably tuberculous, a positive precipitation test was obtained. The sixteen cases which gave a positive reaction to the precipitation test also showed signs which were indicative of a tubercular focus. I will mention a few of such cases.

Case 51.—Male, 18 years of age, single, clerk; complained of cough which was persistent for eight weeks; lost in weight; ran an afternoon temperature for two weeks; had profuse night sweats; blood pressure, systolic, 108, diastolic, 73. Examination of chest disclosed dullness and rales over upper left lobe anteriorly. No sputum was obtainable. Roentgenogram showed marked thickening of both hili, some enlarged glands surrounding upper horn of left lung. In this region was found increased peribronchial thickening, radiating into the upper left lobe. Radiographic diagnosis, "Suspected early tuberculosis. This case gave a persistent positive precipitation test for six weeks, after which time, it was negative and has been since then. The symptoms have become less marked; he has gained in weight; no temperature, no cough or night sweats.

Case 51.—Male, 18 years of age, single, clerk; complained of pain in left side of chest especially after exercise; duration, one year; no loss of weight; slight cough; distress immediately after eating; had pneumonia in 1920; blood pressure, S. 112, D. 70; dullness left side anteriorly; no rales elicited; x-ray showed changes characteristic of a chronic inflammatory exudative process. Diagnosis "probably tuberculous"; precipitation test positive.

There were but six cases with a history of clear-cut phthisis which gave negative reactions. These were residents of a local sanitarium. I am informed that three of such cases have been discharged as arrested. The others are very much improved. Contamination may have been the source of error in this instance.

With the data so far presented, one is warranted in offering the following hypothesis:

There exists in the urine of actively tuberculous persons antibodies which are capable of precipitating tubercle bacilli.

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## THE PROTOZOAN DEBRIS AS THE PRIMARY CAUSE OF MALIGNANCY*

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CHICAGO.

In presenting a description of this organism as the cause of malignancy, my main object is to establish priority of discovery. Inasmuch as I am working on an antitoxin, I am frank to admit there are some points which I am withholding, until same is complete.

The name implies a description. It is composed of a male segment spiral in character, 3 to 6 microns in length, very thin with sharp extremities, which stains poorly; a female segment, small spherical 4/16 to 1.5 microns depending on stage of development, and a debris asexual element which occurs in masses of varying comma-like shapes. It is a strict anarobe, growing only on special media; requiring about an average of one week and a rather high temperature.

It gives rise to a soluble toxin, composed of heat stabile and heat labile elements intensely toxic to animals. The spiral organism is present

*Read before Section on Medicine, Illinois State Medical Society, Chicago, May 18, 1922.

mostly in tissues and growths inoculated freshly from tissues: the debris masses are present chiefly in blood: the female cells occur chiefly in media, although all three types are found in moribund cases. This organism is present in the tumor tissue, in the blood, in ascitic fluid and spinal fluid.

My attention was first attracted to these spirilla like organisms in the tissue juices—however I noted debris masses, but presumed it was some of the macerated tissue that escaped through filter. I inoculated a set of rabbits and guinea pigs, and much to my surprise they all died, showing the same pathology—a retroperitoneal mass—small round celled in character, no tendency to penetrate other tissues but a great many adhesions to surrounding organs, which required gentle dissection. In one old rabbit which lived 9 months, a tumor developed in the lung of the same character.

I macerated the tissues obtained from these tumors, reinoculated other animals, using rabbit tissue on guinea pigs and guinea pig tissue on rabbits; all developed a retroperitoneal tumor—the pathology was alike.

I then proceeded to try and grow the organism—the array of media would make a newlywed's experiments in cooking look sick—in fact I have forgotten most of the formulae. However on one type of media, I secured a growth which appeared crystalline in character—I have since come to the conclusion that this crystalline appearance is due to the formation of gas by some strains. Examination microscopically revealed a spiral like organism, but an extreme quantity of debris. I then proceeded to inoculate animals with this culture. Much to my surprise the animals died in a shorter time, each had a retroperitoneal mass, various degree of adhesions, but no metastases. I recovered this organism from the heart blood and the tissues and continued inoculating other animals and recovering organism.

I noticed a great number of spheroidal bodies varying in size which seemed to be always present in the culture media; close observations showed some had a very minute protuberance and there always seemed to be a zone of attraction for the spirochete in the vicinity of these spheroid bodies. Continued observation was rewarded by actually seeing the spirochetes approach the protuberance and finally enter and disappear within the cell. I have since noted changes in the character of these spheroidal cells after fertilization, and believe the debris masses are the asexual elements of this organisms.

I then proceeded to secure the blood as well as the tissue from patients suffering from carcinomas as well as sarcomas and was able to isolate the organisms from the blood as well as the tissue.

I believe this organism is the cause of malignancy for the following reasons:

They are found in 100% of all cases suffering from sarcoma as well as carcinoma.

They are 100% pathogenic to rabbits, guinea pigs and white mice.

They are more virulent to young rabbits than old ones.

The average range of life of animals inoculated with tissue juices is two to six months: when the animal is inoculated with a suspension of this organism in salt solution, the duration of life averages about 6 weeks, depending on the virulence of the strain. Animals fed with a smear of this organism on carrot live one to two weeks. Animals inoculated with toxine live 2 to 6 days, although the toxine removed from a malignant 68 pound tumor did not kill the animal for 2 months—this is exceptional, while the organism fed to the animal killed in three weeks. Virulence of the toxine depends on the strain, size of dose and age of animals—young rabbits are ideal. I have been able to protect some with an antitoxine.

I used one batch of white mice and divided them into three parts, the first was vaccinated with the organism and covered with collodion, the second was inoculated with a suspension in salt solution under the skin, and the third was fed a smear on carrot and were kept in separate jars. Five days was the maximum length of life: post showed a toxemia, no growth, only inflammatory process where inoculated or vaccinated and the organism was present in the heart blood. I abandoned the idea of working with mice, believing them too susceptible to toxine to get results.

They are found in blood of patients suffering from malignancy in the earliest stages, as well as tissue before definite changes are present. The following cases are interesting. A child brought in suffering from some obscure mental derangement, put through various tests which were negative. The opthalmologist reported a choked disk in one eye. She appeared to be suffering in-

tensely at times with pain in the frontal region, then periods of irritability and quietness. The child was discharged as subnormal, although her mother insisted she was quite normal until an attack of whooping cough some months previous.

I secured this organism from the spinal fluid. Two months later I learned that her mother went in to call her for breakfast and found her dead in bed. I didn't know it in time to secure a post.

Another case came into the hospital with vague abdominal symptoms, a ventral hernia, result of a previous laparotomy, and an enlarged prostate. The prostate on cut sections exuded pus on pressure, there was no microscopic evidence of malignancy: microscopically it showed dilated acini, some round and polymorphynuclear infiltration. I isolated this organism both from the tissue and blood of this man and proceeded to forget about the case. Two years later I met his wife and she informed me that he was dead for several months, had been ailing right along and nobody seemed to diagnose his trouble.

A young woman well nourished, who had been operated on some five months previously for a carcinoma in the cul-de-sac of Douglas and a quart jar of malignant tissue was removed, died from what appeared to be an acute dilatation of heart. The scar was so insignificant, the pathologist would have overlooked it had not the operator been present. The organs showed no metastases whatever, only the effects of an acute toxemia. I secured some of the blood from the heart chamber, and placed in ice box until serum settled. I pipetted off serum and added a carbolic solution (in salt solution) to the serum and let it stand for several hours in order to kill any organisms present. I neutralized the carbolic acid and injected three c. c. of this serum into three rabbits—all of them died in 7 days and showed only a toxemia—no growths. I recovered a virulent culture from this blood, taken from woman.

I have secured the organisms from carcinoma and sarcoma post-operative cases—several months after operation when patient was seemingly enjoying improved health—one of the sarcoma cases is alive after an amputation performed some four years ago.

75% of these patients had died at my last checking up.

This organism fulfills the 3 laws of Koch.

The habit of this organism explains Cohnheim's theory in a logical manner. The spirochete attaches itself to the cell or enters it, a polynuclear or wandering cell engulfs the whole epithelial or connective cell in order to kill the protozoan debris; it is a survival of the fittest: the wandering cell is overcome and the epithelial cell or connective tissue cell lodges in whatever organ happened to be the final battleground. Proliferation of a like tissue occurs under the powerful stimulus of the toxine generated.

It explains the parasitic theory because it is a parasite.

The generative cycles explain the presence of Plinnie's bodies, stippled cells, and bird-eyes of Von Leyden.

It explains the improvement temporarily when certain clinical treatment is given; surgery, cmetine, radium, and Colle's Serum.

I believe malignancy is spread mainly by mouth. Statistics show gastro-intestinal malignancies are more common than other types in countries like China and Japan where intestinal parsitic diseases are very common, and where they eat raw vegetables. In tropical countries and Mohammedan countries where the food is cooked and skin cancers predominate, it may be that the insects act as carriers inoculating the inhabitants by means of bites.

I believe that cancer of the gastro-intestinal tract is spread largely in this country by means of common eating utensils—restaurants, soda fountains, dirty dental instruments, bars, public drinking cups. The tobacco weed may be responsible for the infection of the tongue, lip and larynx in men, because we see very few in this location in women.

I never succeeded in isolating this organism from fibromas except where microscopic examination showed a tendency to malignant degeneration and the organisms were then present in the blood stream. I would not be surprised if future experiments would show these benign tumors to represent a healed lesion of malignancy in earlier life, just as fibro-careous masses represent healed tubercular lesions.

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## DISCUSSION.

Dr. E. H. Ochsner, Chicago: I have never met the microorganisms which Dr. Flynn has described, but I have been convinced for a long time of two things; First, that malignancy is some kind of an infection. Second, that sarcoma and carcinoma are

either caused by the same or similar infections. I have not time to go into the details upon which I have based this conclusion. I am certainly delighted to hear this paper and hope to get in touch with the Doctor and see some of the organisms she describes, for it is along this line somewhere that the solution of malignancy has to come. I think the men who are working along the older lines are on the wrong track and that they are going to fail, and that some less well known investigator who approaches the matter from a new angle will find the solution. I hope Dr. Flynn has found it. When the thing is once solved pathologically, I do not believe the cure will be far distant.

## THE INDICATIONS FOR SURGICAL INTERFERENCE IN TOXIC GOITER*

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The indications for surgical interference in toxic goiters can be summed up in one word: "Toxicity."

Any toxic goiter, unless there are definite, distinct contra-indications, is a proper subject for operative interference and relief. It is less a question of indication than contra-indications.

Of late years the chief contra-indication has become a high metabolic base line. +50 is the generally accepted safe high line.

No goiter should come to the operating table without a determination of his or her metabolic line. This does not mean one or two tests but a series of tests.

Prolonged and absolute rest does wonders for these patients.

It is not at all unusual to see a patient enter the hospital with a metabolic line of +100 or more, presenting a perfectly hopeless clinical picture, yet come to the operating table with +50 after a few weeks or even months of such rest. I have kept them in bed three months.

A patient, whose hyperthyroidism was the most vicious I have ever seen—whose metabolic line was +117, was successfully cured through a thyroidectomy with such astonishing end results that she has since become a bride. She was operated on about nine months ago.

It will be interesting to see what a probable pregnancy will do for her.

During a recent visit at the Mayo Clinic, I had the opportunity to carefully go over their magnificent laboratory where their metabolic tests are made. As you know, about 30 girls are employed there in doing the technical work. The director of the laboratory did me the courtesy to show me personally through the place. A test had just been taken. He showed me the report. It was +55.

"Well, what are you doing to do now?" I inquired.

"This report," he answered, "will be submitted to the surgeon who has the case in charge, and it will depend on his judgment, on his summing up of the whole clinical picture, as to what is going to be done."

That has been, and is, my attitude toward basal metabolism.

This brings us down to the practical and dependable contra-indications which were the guide of goiter surgeons before we knew anything about the metabolic rate.

The great contra-indication, which Kocher used to dwell upon with such emphasis is "Broken Compensation."

It is not so much a question of the rapidity of the pulse rate, it matters little if the rate is 120 or 150, but it is a question of the ability of the heart muscle to contract properly, of the degree of myocardial degeneration.

Diarrheas are of grave prognostic significance. This, of course, indicates the severity of the intoxication.

Never operate during the upward course of your hyperthyroidism. Never rush your patient to the operating table.

Don't send your patient in one day and expect to operate the next.

Your success as a goiter surgeon does not depend so much on your operative skill, or on some particular finesse you may have developed in this operation, or upon the choice of your anesthetic, whether local or general, or both combined, but upon the degree of experience, which tells you when to operate, when to quit while operating, or whether to operate at all.

As to the End Results:

On the whole there is no more satisfactory class of patients than goiter patients. To judge fairly of our end results we must divide toxic goiter into two groups.

1. The true primary toxic goiter, true Basedow's. This type is toxic from the very beginning. However small the goiter may be—there may be no perceptible increase in the thyroid at

*Read before the Englewood Branch, Chicago Medical Society, April 4, 1922.

all—yet the toxic symptoms are markedly prominent from the start.

2. The second group are the toxic adenomata, secondary toxic goiters. The goiter has persisted for years, but lately, say a few weeks or months before you were consulted, have toxic symptoms appeared.

Really brilliant results follow operative interference in this type of toxic goiter. If carefully selected, the mortality is nil, and the symptomatic relief is nearly 100 per cent.

Not so much can be said of the first group. Even in the most careful and experienced hands, there is still a mortality, and the end results are by no means satisfactory.

Only about 20 per cent make a complete symptomatic recovery, the remaining 80 per cent are only more or less improved.

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## THE PRESENT STATUS OF THE GOITER PROBLEM

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Someone has said, regarding the goiter problem, "The surgeon has done too much, while the medical man has done too little. It was the failure on the part of the medical man to give relief to the sufferers from goiter that compelled the surgeon to work out a comparatively safe method of thyroidectomy. But with a clear understanding of the subject as we know it today, a very large percentage, if not all of the cases of simple goiter, if taken in time, can be prevented, and the majority of the existing cases cured."

In order to understand the goiter problem, certain known facts must be kept distinctly in mind. First, metabolism is the interchange in the body tissue of food elements for waste material, and the repair of tissue by these food elements, and the creating of body energy by the union of food elements and oxygen.

We know now that the secretion of the thyroid, if not wholly responsible, is in the main responsible for the internal oxidation of food elements, which results in the production of heat and energy. The other ductless glands may play some part in this work, but it is the thyroid secretion which controls the body basal metabolism.

It had been known for a number of years that the secretion of the thyroid was some form of iodine. Kendall of the Mayo foundation has isolated this thyroid secretion, and called it "thyroxin."

In the normal child, up to from seven to sixteen, in the girls, and from nine to sixteen, in the boys, the evidence seems to be that the thymus gland controls the body basal metabolism, but when the child enters the developed-mental period, the thymus gradually loses its metabolic control, and the thyroid assumes it, so that by the time the development period is well established, the thyroid has control of the body basal metabolism, but in order that the thyroid may properly control body basal metabolism, the gland must be capable of making and supplying to the circulation a normal amount of "thyroxin." In order that the gland may produce a normal amount of "thyroxin," it must be supplied with sufficient iodine from which to manufacture a normal amount of this secretion.

The old so-called "goiter regions" which were supposed to be due to the drinking water or snow water, as in Switzerland, are now known to be regions where iodine exists in small amounts. Near the seashore, goiter is almost unknown, but in certain regions it is prevalent. In these regions, even the iodine content of the salt is removed, in its preparation for domestic use.

The thyroid of the young boy or girl possesses glandular structure enough to manufacture several times the required amount of "thyroxin" necessary to maintain body basal metabolism at a normal rate, but if the gland is not supplied, by the circulation, with sufficient iodine, it becomes necessary that several times the normal number of gland cells be employed in the extracting of the iodine from the circulation, and in the manufacture of "thyroxin." In other words, the thyroid hypertrophies, in order to produce sufficient "thyroxin" to maintain normal basal metabolism, so that the simple goiters of childhood, and young manhood, and young womanhood, are, with exception of the rare exophthalmic goiter, compensatory goiters.

The treatment for these cases is simply knowing that the enlargement of the gland is due to overwork and a lack of iodine. We supply them iodine either externally or internally; externally, in the shape of ointments, and internally, as the sodium iodide in one-half to two grain doses,

t.i.d., for two weeks; then waiting six months and repeating it.

Such treatment will cure ninety to ninety-eight per cent. of the cases of simple goiter, if properly followed up.

It must be kept distinctly in mind that no case of pure simple goiter ever presents any symptoms of hyperthyroidism, but it must also be remembered, that the thyroid contains many primitive giant cells, which may, by the overactivity of the gland, be stimulated into growth, and one or many adenomas developed in the gland substance. These adenomas may be many and small, or they may attain great size, and all kinds of shapes, but so long as they do not irritate the thyroid cells, and cause the cells to produce an over-supply of "thyroxin," these adenomas do no harm but present cosmetic and pressure symptoms.

Plummer and Boothby of the Mayo clinic have found that simple goiter with adenoma never presents symptoms of hyperthyroidism until after they have existed for from fourteen to seventeen years. This fact is to be kept distinctly in mind, because simple goiter with adenoma should never be given iodine or thyroid extract, because of the possibility of precipitating hyperthyroidism.

*Treatment of Simple Goiter with Adenoma.* The writer believes that the only safe treatment for simple goiter with adenoma is surgery, shelling out the adenomas, which can be done, being careful to leave sufficient of the gland structure to supply the circulation with a normal amount of "thyroxin." Surely, iodine or thyroid extract are dangerous drugs to use in these cases, while radium and the x-ray, in our experience, not only do no good, but, we are sure, do harm. They tend to hasten the breaking down of the adenoma, thus increasing the irritability of the glandular cells. They tend to thicken and produce adhesions between the adenoma and the gland structure, and thus increase the dangers of surgery. The injections into the gland of a simple goiter with adenoma, with such drugs as iodine, or iodine and carbolic acid, or boiling water, is fraught with danger.

When once the diagnosis of simple goiter with adenoma is made, the treatment in the light of our present knowledge is first, if upon careful examination, it is evident that:

(A) Hyperthyroidism does not exist.

(B) Hyperthyroidism does exist.

If hyperthyroidism does *not* exist, the possibility of its development in from fourteen to seventeen years is not to be forgotten, but if no hyperthyroidism exists, special attention is to be given to the general condition of the patient, removing all findable sources of infection, seeing to it that the diet is well balanced.

In our judgment, women with adenomatous goiters ought never to assume the responsibility of pregnancy.

Attention is to be given to the elimination, and removing, as far as possible, all mental strain.

If hyperthyroidism *exists,* or even if there be a suspicion of its existence, as some excessive sweating of the hands and feet, or body in general, or extra heat of the body with a tendency of a rapid heart, yet not a true tachycardia, with some increase in the basal metabolism rate, say from plus fifteen to plus thirty, under these conditions, thyroidectomy is to be done, and it is the only logical treatment for these cases.

*Exophthalmic Goiter.* It is to be distinctly kept in mind that while the syndrome which we call hyperthyroidism is the clinical manifestation of exophthalmic goiter, it is not exophthalmic goiter, and while the syndrome of exophthalmic goiter may become more or less manifest with adenomatous goiter such a syndrome with adenomatous goiter does not make an adenomatous goiter an exophthalmic goiter.

In *adenomatous* goiter, it is the irritation of the adenoma upon the thyroid cells which causes them to produce an excess of "thyroxin" but this "thyroxin," while in excess under these conditions, is a *normal* secretion.

In *exophthalmic* goiter, there may or there may not be an excess of "thyroxin," but as Kendall has suggested, and it is the only logical conclusion to assume, in exophthalmic goiter, the arrangement of the molecules of "thyroxin" is different than in normal "thyroxin," just as we all know the composition of sugar and gun-cotton is the same, but there is a different arrangement of the molecules, producing two vastly different compounds.

As we all are aware, we often find cases of marked hyperthyroidism with but little or no enlargement of the thyroid. By accepting Kendall's explanation, the case is easily understood. With these facts in mind, exopthalmic goiter

may be defined as a condition of the thyroid which causes it to produce a "thyroxin" of a *toxic* nature. This may be in *excess* or *not*. Plummer has defined hyper-thyroidism as a state where the individual's basal metabolism is continually above normal.

As to the cause of the derangement of the thyroid in exophthalmic goiter, we do not as yet know. The writer has seen it follow pneumonia, sore-throat, infections of the sinuses, pregnancy, la grippe, and a number follow deep tonsillar abscesses, as well as fright.

It would seem that infection plays some part in its cause, but other cases give no history of infection, which does not, however, eliminate infection.

*Treatment of Exophthalmic Goiter.*

First. Conservation of body energy.

Second. Overcome the existing thyrotoxicosis.

Third. Limit, or obliterate in part, the blood-supply of the gland.

Fourth. Obliterate the ability of the gland to produce "thyroxin," partially or almost completely, by thyroidectomy.

Body energy can be best conserved by rest in bed, and bed rest will often reduce the body basal metabolism rate fifteen to thirty points. Special attention must be given to forced feeding of easily digested foods, with attention to digestion and elimination. If diarrhea be present, small doses of tincture of opium will give good results.

To overcome the thyrotoxicosis, we believe that the hydrobromate of quinine in from three to five grain doses, t.i.d., is the best remedy. Surely, it has given us good results.

If the patient is a woman, and at or near (either before or after) the menopause, one-fourth to one-half grain of corpus luteum added to the quinine has helped.

Sometimes, the heart symptoms are the most important ones, a mitral leak is present, the heart's action is rapid; often a multitude of extra systoles are found, with more or less signs of myocardial failure, as some edema, bronchial cough, dyspnea, or even orthopnea.

The ice-bag over the heart is one of our best remedies. Strophanthus, from two to four minims of the tincture, every four hours, has given good results. Digitalis is to be used guardedly, one grain of the powdered leaves, t. i. d. watching closely for symptom of digitalization.

Attention must be given, as soon as possible, to the tonsils, teeth, and sinuses. To limit the blood-supply to the thyroid, the ice-bag over the gland gives excellent results. If the skin is kept well covered with vaseline, the ice-bag can be worn almost continually for days. It is wonderful how it will quiet the heart, promote sleep, and assist in reducing the basal metabolic rate. Ligation of one or both poles of the artery is a procedure which not only gives wonderful relief, but it reduces the mortality rate, when the case comes to operation. Upon the heart hangs the patient's future. If the myocardium can regain its tone, and the blood-supply to the gland be reduced, surgery may or may not be imperative, but surely everything possible ought to be done to increase the body resistance, and to reduce the basal metabolic rate, before thyroidectomy is done.

Radium and the x-ray have been quite extensively used in the treatment of exophthalmic goiter for several years. Some wonderful results have been reported. If they do good, and they probably do, they do so by the destruction of glandular cells. The danger is of destroying too much of the glandular structure. Personally, we believe that ligation with partial thyroidectomy, if necessary, is much preferable to the use of these agents.

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## X-RAY AND CLINICAL FINDINGS IN NORMAL CHEST

### (of children—6 to 10 years)

NATIONAL TUBERCULOSIS ASSOCIATION MEDICAL RESEARCH

NEW YORK, N. Y.

The National Tuberculosis Association sometime ago began a new and important phase of its work in an attempt to increase the quantity and character of research work in problems related to its own field in the United States. For this purpose it appropriated $20,000.00 and appointed a small committee composed of Dr. Wm. Charles White, Medical Director of the Tuberculosis League of Pittsburgh, Dr. Paul A. Lewis, Director of Laboratories of the Phipps Institute, Philadelphia, and Dr. Allen K. Krause, Director of Kenneth Dows Research Fund, Johns Hopkins Hospital, to expend these funds to the greatest advantage.

This committee decided that the best use of

these funds would be in assisting researches already under way that held the greatest promise of increasing the practical knowledge of physicians dealing with tuberculosis. This, they considered, would bring the greatest help to those suffering from tuberculosis and the greatest boon to the public from whom the funds were collected. This plan has been carried out in cooperation with the universities.

One of the researches was an effort to establish the x-ray and clinical findings in the chest of a normal child up to ten years of age. For this problem the National Tuberculosis Association nominated the following groups of roentgenologists and clinicians.

Dr. H. K. Pancoast and Dr. H. R. Landis,—University of Pennsylvania.

Dr. F. H. Beatjer and Dr. C. R. Austrian—University of Johns Hopkins.

Dr. H. K. Dunham and Dr. K. D. Blackfan—University of Cincinnati.

The signed reports of these physicians is here presented in two sections with the hope that they may promote a discussion which will be fruitful in establishing the truth in these two fields.

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## THE X-RAY AND CLINICAL FINDINGS IN THE NORMAL CHEST OF THE CHILD

### Report of the Clinical Division of the Committee on Medical Research of the National Tuberculosis Association

The value of Roentgenography in determining the presence of pulmonary disease has long been recognized. Studies to determine the roentgenograms of various pathological lesions of the lung have been almost without number, yet much difference of opinion exists in the interpretation of findings, largely because no satisfactory observations have been made establishing the variations that may occur in the normal. To one observer, shadows noted are indicative of disease; to another, they are not evidence of a pathological process; to one, they represent lesions of clinical significance; to another, they suggest changes of no moment. The realization of this unsatisfactory state of affairs was widespread but it remained for the Research Committee of the National Tuberculosis Association seriously to consider it and to set about to correct the shortcomings.

In the spring of 1920, that Committee called together the collaborators in this work and instructed them to set about in ways of their own choosing to solve the problem, extended to them a financial grant and in order that the problem might be a very definite one, asked that the immediate study be limited to a consideration of the chests of normal children between the ages of 6 and 10 years. The work was begun promptly and a preliminary report was made at the annual meeting of the Association in May, 1921. The findings at that time were incomplete and because of the then limited observations, no very definite conclusions were drawn. However, the practical need of a solution of the problem was apparent. Study was continued throughout 1921 and the first four months of 1922, and the data independently assembled were jointly discussed to evaluate them. Although each pair of workers carried on its investigations without intergroup consultation, although each approached the subject from a different angle and when first met held views apparently not altogether in accord, it was agreeable to find than an exchange of conclusions disclosed almost an unanimity of opinion. The findings of these six observers—three clinicians and three roentgenologists—are presented to you for your consideration.

Theoretically, the normal child is one of ideal height, weight and development for his age, without subjective or objective evidences of deformity or of disease and without residual changes due to antecedent pathological processes. Practically, a normal child is one of average height, weight and development for his age, symptom-free and without signs of disease. Each such individual, in more or less relation to his age, will have been ill more or less often and as a consequence may be expected to show variations from the ideal, not because of present disease, but as a result of residual changes that persist. An appreciation of these facts makes it apparent that the findings, clinical and roentgenographic, in normal children as we meet them will vary greatly from any fixed standards and still must be considered as variants of normal.

The clinical data dealt with in this report were obtained by careful examination of apparently healthy children between the ages of 6 and 10 years. All children who showed signs of disease were excluded from the series. Individuals from various strata of society, foreign and native born, residents of urban and of rural communities,

school children and children residing in institutions, children exposed to tuberculosis and some without a history of such exposure, children with and without a history of previous infectious diseases, all symptom-free, and of an approximately normal height and weight for their ages, were studied. A history of each individual was recorded and in making the examinations of the chest, care was always observed to have the child relaxed and to see that no cramped or unnatural posture was assumed, for, as is well known, faulty positions may lead to findings that cause confusion in interpretation. In addition, a tuberculin test was made on every child. The clinical data were then assembled and after the roentgenologist had interpreted his plate independently, the clinical and roentgenographic findings were correlated.

In all, over 500 children were thus studied and as a result some definite conclusions seem warranted.

As in the adult, so in the child vocal fremitus is more marked over the right upper chest than over the left.

It is generally stated that the percussion note elicited over the lungs of normal children within the age limits under consideration, is fuller, more tympanitic, of higher pitch and more resilient than that noted over those of adults, and that frequently the tympanitic quality is quite outspoken, especially over the lower lobe of the left lung. Although in general our observations confirmed this view, we have been impressed by the fact that in an appreciable number of such children, the note obtained on percussion over the lungs is indistinguishable in quality from that elicited over the lungs of normal adults and that the usual resilience of the note is lacking. These findings in many instances have an analogue in shadows noted in the x-ray films, shadows indicative of increased density along the bronchial tree, similar to those seen in the plates of normal adults. This correlation of the findings on physical examination and on x-ray study is more constantly possible in studies of the upper half of the chest. When minor changes, similar to those discovered by x-ray examination of the upper lobes, occur in the bases, they usually escape detection on physical examination. In those instances, in which no shadow is found to explain the deviation of the note from the generally accepted one, it is our belief that the lack of resilient quality may be due to a decreased elasticity of the chest wall.

The so-called tympanitic quality of the percussion note over the left base may be increased, decreased or be entirely lacking, depending upon the degree of distention of the stomach or colon, the curvature of the spine, and may likewise vary with the position of the diaphragm or with the posture of the child during the examination. The note over the upper thorax is often the same on the two sides. Kronig's Isthmus averages 5 to 6.5 cm. in width. The lower margins of the lungs posteriorly are at the level of the 10th or 11th rib and descend from 1.5 to 3.5 cm. during forced inspiration.

A just detectible diminution of resonance over the apical regions is of no significance unless associated with a modification of the breath sounds in those areas or with other abnormal auscultatory findings.

It is generally accepted that normally in childhood, the breath sounds have a harsh, sharp character, with expiration longer and better heard than in the normal adult. This so-called puerile breathing is physiological and though it may seem trite, let it be emphasized that this exaggerated vesiculo-bronchial respiratory murmur, especially well heard in the areas overlying the great bronchi (i.e. anteriorly at the level of the first interspace and the second rib just lateral from the sternal margins, and posteriorly, particularly on the right side, at the level of the 2nd to the 4th spine) is often incorrectly interpreted as evidence of pulmonary disease. An auscultatory finding that has not been pointed out, or at least, has not been emphasized, has come forcibly to our attention in carrying out this study. Just as the full, deep note or higher pitch characteristically elicited by percussion of the child's chest is often replaced in health by a note more like that produced when one percusses the normal chest of an adult, so, on auscultation of a child's normal lungs, the exaggerated or puerile breath sounds may be lacking, and instead the so-called vesicular respiratory murmur characteristically present in adult life is heard. This finding, regarded by us as a physiological variation, has been noted as early as the age of four years and may perhaps occur in younger children. It is more readily appreciated and more often found than the variation in the percussion note just described. In more than 50% of the children in

which this type of breathing was heard, examination with the x-ray gave findings like those obtained by a study of normal adult chests. In fact, the agreement of clinician and roentgenologist was so constant that we have come on the basis of these variations to designate the chest of normal children as of "puerile" or of "adult" type. The essential fact to be stressed is that so-called vesicular respiration is heard with great frequency in normal children, and is to be regarded as a variation of normal and not necessarily as an indication of disease.

These variations and those of the percussion note are more generally found in children with a history of infections of the respiratory tract. No satisfactory explanation for this finding is offered. It may be due in part to altered resilience of the chest wall, a suggestion supported by the fact that in some instances in which it was noted, diminished elasticity of the thoracic wall was apparent on percussion. It may stand in relation to variations of elasticity of the perenchyma of the lung. It may be due to a relative narrowing of the lumen of the bronchial tree. It is hardly to be considered evidence of increased density of respiratory tissue, for, theoretically, at least, that should lead to a modification towards bronchial breathing.

Concerning the whispered voice sounds, little comment needs to be made other than to emphasize their loud transmission often with syllabation over the region of the major bronchi. Auscultation of these sounds over the upper thoracic spine of the children has led to the conclusion that D'Espine's sign as indicative of enlarged tracheo-bronchial lymph nodes is, to say the least, of doubtful value. In 23 of the children, this sign was elicited without other signs of a mediastinal mass and without any corroborative evidence on x-ray examination. In 3, the sign could not be elicited, although from the x-ray plate it might have been inferred that it should be. Eustace-Smith's sign is so generally present in normal children that it is of little or no practical diagnostic worth. The presence of these two signs together with impairment of resonance in the interscapular region is all too frequently made the premises for a diagnosis of tuberculosis of tracheo-bronchial lymph nodes. This is unwarranted for, as indicated, these signs are unreliable evidence of a pathological condition and the determination of a diminution of resonance in the interscapular region requires such a nicety of technic that even masters of percussion disagree as to the presence or absence of significant findings in this region of the chest.

A year ago, in the preliminary communication to this Society, we stressed the importance of the role that antecedent infections might play in the production of areas of increased density within the respiratory tract. (Bronchial tree, parenchyma of the lungs, etc.) This fact is reemphasized, for further study has established the importance of it. Not only may recognized or remembered infections of the bronchi and lungs be responsible for alteration in these tissues, but other diseases not ordinarily considered of significance in this regard may be causal of such changes. For example, our observations indicate that after measles, pertussis or tonsillar infections, areas of increased density radiating from the hilum into the bases especially, occur with great frequency. Such lesions generally are not discoverable on physical examination and would be unsuspected but for the use of the x-ray. They are referred to in the clinical part of our joint report in order to point out the need of a careful history as well as examination in all individuals, before proceeding finally to interpret the findings of the Roentgenologist. By way of digression, it may be interesting to point out the fact that though measles and pertussis have been known to produce lesions in the upper air passages, involvement of the lower tract has been considered a complication and was thought to occur only when evidence of bronchitis or of broncho-pneumonia was discovered. Our observations indicate that there may be a mild inflammatory process throughout the respiratory passages in a large percentage of the so-called uncomplicated cases of these diseases. This suggestion warrants further study in relation not only to the infections under consideration but also other infectious diseases. That such shadows, mediastinal and basal, noted in children who give a history of uncomplicated measles and pertussis are evidence of healed processes is evidenced by the experience that similar shadows of like origin have remained unchanged and without the development of clinical symptoms in a series of children observed from 3 to 5 years. Such changes must be properly evaluated as indices, not of present

disease, but of lesions past and healed, not as warrant for the diagnosis of present illness and the institution of treatment, but as scars of infections met and overcome.

Most of the children included in this study were tested with tuberculin—some were given a cutaneous test with old tuberculin (Pirquet—others were tested by the intracutaneous method. (Craig.)

The foregoing facts have been detailed at some length to establish the major thesis that, clinically, the ideal, normal child is a hypothetical impossibility. Children, apparently healthy, symptom-free and active, show on careful examination many deviations from fixed standards, variations that must be interpreted as within physiological limits; standards of height and weight must be elastic; measures of resonance and of resilience of the chest must not be rigid and estimates of acoustic phenomena must permit of a range of difference from the ideal. These facts, clinical experience establishes beyond peradventure, and they suggest a corollary, namely, that x-ray examination of the chest of such children may be expected to show comparable deviations from a fixed ideal roentgenogram.

The studies reported, fortified by past experience, warrant the following conclusions:

1. The data obtained on percussion and auscultation of the lungs of normal children show wide variations from a fixed standard. These variations are usual and are considered to be within normal limits.

2. Inasmuch as the changes referred to are dependent often upon alterations that persist as the residua of past infections of the respiratory tract, it is obvious that a careful anamesis, with special reference to all infections, is necessary if diagnostic errors are to be avoided. Even a history carefully taken is often unreliable, as minimal infections are soon forgotten by many and among the unintelligent classes even more significant indispositions are not readily recalled.

3. Failure properly to evaluate these deviations from a fixed standard will often lead to the unwarranted diagnosis of disease and to even less justifiable treatment.

4. With a proper appreciation of the widest variations that the normal may present from the ideal, the informed clinician is better able correctly to understand the findings of the Roentgenologist, and each, cooperating with the other, is less liable to error.

5. D'Espine's sign as indicative of enlarged tracheo-bronchial lymph nodes is of little value.

6. Recognition of and familiarity with the foregoing data is of cardinal and practical importance to every patient, potential and established. Without a proper appreciation of the facts set forth, no intelligent differentiation between a normal and an abnormal respiratory tract can be made.

In brief, to establish the presence of absence of disease, it is imperative that all data—clinical, laboratory and roentgenographic—must be evaluated and correlated and that no one fraction of the evidence be stressed to the exclusion of the others.

(Signed) C. R. Austrian,
H. R. M. Landis,
Kenneth D. Blackfan.

May 6, 1922.

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## THE X-RAY AND CLINICAL FINDINGS IN THE NORMAL CHEST OF THE CHILD

### Report of the X-ray Division of the Committee on Medical Research of the National Tuberculosis Association

It is generally conceded that one of the most important factors in accurate interpretation of the appearance of morbid processes in the roentgenogram of the thorax is a thorough familiarity with the normal and variations therefrom within normal limits. With a full realization of this in view the National Tuberculosis Association in 1920 appointed a committee comprising three roentgenologists and three itnernists to make a study of the normal chest of the child between the ages of six and ten years. This group was instructed to work in cooperation and to make a report of their investigations before the Association when their studies were completed and their conclusions reached. The members selected for the committee were Dr. H. Kennon Dunham of Cincinnati, Dr. Frederick H. Baetjer of Baltimore and Dr. Henry K. Pancoast of Philadelphia to act in the capacity of roentgenologists and to work in cooperation with the respective internists in the same cities, Dr. Kenneth Blackfan, Dr. Charles R. Austrian and Dr. H. R. M. Landis. Each group of two was to work inde-

pendently until a satisfactory number of individuals were examined and the entire committee was then to meet and draw their conclusions for presentation. It was to be the duty of the internist in each group by careful clinical study to select as nearly normal children as possible for examination by the roentgenologist. The entire procedure was to be carried out with strict cooperation between the two members of each group.

It was soon realized by the x-ray members of the groups that an attempt to describe a normal chest was practically impossible. Their endeavors soon began to centre around the description of a theoretical normal with wide variations that would serve as a basis for the interpretation of abnormal appearances and tend to preclude the possibility of erroneous diagnoses being based upon faulty interpretations of hilum shadows, trunk shadows and linear markings more or less altered in appearance by the frequent respiratory infections of children. They realized that herein had existed the greatest source of error in interpretation, and no doubt the Association had this same thought in mind when the committee was appointed to take up these investigations. Errors in interpretation have been made chiefly in connection with the diagnosis of pulmonary tuberculosis.

It was the concensus of opinion that children are probably more apt to show definite x-ray evidences in the hilum and trunk shadows of simple as well as serious respiratory infections than adults. Practically all children of the ages of those examined have had at one time or another one or more respiratory infections, especially measles and whooping cough, that are likely to produce very apparent changes in the shadows mentioned and which will remain distinctly visible for a variable period of time. These apparent deviations from the normal are not necessarily abnormal when observed, but may be the harmless results of one or more infections. No doubt such appearances have many times been misinterpreted as evidences of tuberculosis. In the conclusions reached by the committee the attempt has been made to preclude this possibility.

Many of the general observations made have not been included in the conclusions. One of those perhaps worth mentioning is the fact that the heart of the child is found to extend relatively further to the right than in the adults.

The thoroughness with which the studies were carried out may be in part realized from the number of individuals examined. Over five hundred children were selected from all strata of life, as stated in the clinical report of the committee.

The groups comprising the committee met at the Phipps Institute, Philadelphia, March 3, 1922. Prior to this meeting there were misgivings as to the possibility of an agreement upon any very definite conclusions, but much to the satisfaction of all the members a definite agreement was reached and the conclusions were completed after a few hours careful deliberation.

To assist in a better understanding of the conclusions of the committee, a composite diagramatic reproduction of several roentgenograms was made and is shown in the accompanying illustration. It must be remembered that the three zones like the chest have thickness as well as length and breadth. Thus the zones extend anteriorly and posteriorly from the lung root as well as laterally.

### CONCLUSIONS OF THE X-RAY DIVISION OF THE COMMITTEE

*The Normal Chest.* The normal chest of the child from the roentgenologic standpoint is subject to such wide variations within normal limits as to be beyond the possibility of exact description.

*Hilum Shadow.* The conglomerate shadow commonly called the hilum shadow, when found lying entirely within the inner third or zone of the lung area can be disregarded (or regarded as normal) except where it is made up of a solid mass of homogeneous shadow, giving undoubted evidence that it represents a growth or mediastinal pleurisy.

*Calcified Nodes.* Calcified nodes at the root of the lung, without evidence of lung disease, are of no significance except as a possible evidence of some healed inflammatory condition, possibly but not necessarily tuberculous. They are a common finding in normal chests.

*Density and Thickness of Trunk Shadows.* In the normal lung the bronchial trunk shadows are not visible in the extreme apical regions. For convenience of description the remainder of the lung is divided into three vertical zones, extend-

ing outward from the lateral border of the spinal shadow to the lateral chest border.

The inner zone contains the root shadows.

The mid zone contains the trunk shadows, gradually fading out into their final subdivisions.

The peripheral zone contains radiating lines from these and fading off before the periphery is reached.

Where in the mid zone or peripheral zone, these shadows do not disappear in the characteristic fashion described, the appearance may be evidence of a variety of conditions, past or present, of an inflammatory nature or otherwise. It may accompany a tuberculous process but is not necessarily indicative of tuberculosis.

*Improper or Misleading Terms.* The use of the terms "peribronchial tuberculosis" and "parenchyma tuberculosis" is not to be recommended in the interpretation of roentgenograms of the chest. Until corroborated by laboratory or clinical findings, the use of the terms "active" and "quiescent" should not be definitely applied to evident lesions demonstrated on plates.

(Signed) HENRY K. PANCOAST,
KENNON DUNHAM,
F. H. BAETJER.

May 6, 1922.

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## LIFE AND HEALTH

CASPER L. REDFIELD
CHICAGO

The encyclopedia says that Life is "the popular name for the activity peculiar to protoplasm." According to this definition, life is a mere operation. Herbert Spencer says that life is "the continuous adjustment of internal relations to external relations." That also represents life as being nothing more than an operation.

But dry seeds are inert objects which have life, as is evident by the fact that they can grow when placed in the proper conditions. And many animalculae remain dessicated and inactive for long periods, yet revive when moistened with water. These facts show that life is something more than an operation of a physical body.

The article from which our first quotation is taken also says that we know life only as a "quality of living matter." That is defining life in terms of itself and does not help us in the slightest. It is like saying that heat is a quality of hot things.

Further along the same article refers to the "architecture" of the protoplasm of the cell, and says that life is "a function first of the peculiar architecture of the mixture, and then of the high complexity of the compounds contained in the mixture." But as life may disappear without causing any observable change in the architecture of the cells or the complexity of the chemical compounds, the definition is mere guess work.

All of these definitions, and all of the explanations in the article quoted from, smack of the superstitions of past ages. They designate life as being some quality, function or operation of a substance which may be seen but which is as mysterious as the ghosts which frightened our ancestors. They all represent life as being unrelated to anything in the universe other than this complex substance known as protoplasm.

Here we will take a different attitude and define life as being one of the many forms of energy we know in mechanics.

Some of these known forms are motion of physical bodies, heat, light, electricity, magnetism and chemical affinity. We know that these are different forms of the same thing because we can transform them into each other. While we do not know what electricity is, we know that we can transform it into motion of a physical body, and we know what such motion is. In this transformation the electricity disappears and the motion appears. Going the other way, we can transform motion back into electricity, and in this transformation the motion disappears as the electricity appears. Such transformations back and forth show that motion and electricity are different forms of the same thing, just as water and steam are different forms of the same substance.

Some of these transformations we can make fully and completely, and some we can make only in part. Some we can make directly, and some we can make only indirectly through some particular medium. But the fact that we can make a particular transformation only through a particular medium does not make the energy a function of the medium. If we can show that life is a transformation from some one or other of these known forms of energy, and that we can transform it back into some one or other of them, then we have removed it from the realm of the

mysterious to that of the known, and can study it scientifically.

Energy is commonly defined as "stored work," and all kinds of energy are measured ultimately in terms of work. Work is measured in foot-pounds, ergs or other units. Consequently, if, by any process, we can cause life to disappear and can cause foot-pounds of work to appear in place thereof, we have made the required transformation and demonstrated that life is a form of common mechanical energy.

When a person winds up a spring he stores energy in it, and that energy is common mechanical energy which may be measured in foot-pounds. But the energy thus stored in the spring came out of the muscles of the man who did the winding, and it had to be in those muscles before it could come out. By this example we see that common mechanical energy exists in the living organism as is shown by the fact that it may be withdrawn therefrom. Or we may represent the matter in another way by saying that a foot-pound of work is the same thing whether it comes from man, horse, dog or steam engine. In fact, the steam engine, the water wheel and the windmill were made to do the identical work which had before been done by man and his domestic animals. The fact that we have established certain laws of energy by studying the operations of mechanical appliances should not blind us to the fact that those laws apply to energy wherever it may be found.

Energy is withdrawn from the system by physical efforts, and the quantity so withdrawn may be measured in foot-pounds. If the efforts which withdraw energy from the system are continued for a considerable period, a person becomes tired, a fact which shows that the existence of a considerable quantity of energy in the system is necessary to comfort and well being. If physical efforts are great and long continued, a person may die for no other cause than the withdrawal of foot-pounds of energy. This means that the life within the individual has been transformed into a known form of energy and expended, and this in turn means that life itself is a form of energy.

A person exposed for a long time to cold may die from no other cause than such exposure. Exposure to cold is a process of withdrawing heat units from the body, and heat units are a known form of energy. In this case, life disappears by being transformed directly into heat and conveyed to the surrounding medium.

A person can live and move only because of the heat units obtained in food. Stop the supply of food from which heat units can be derived, and life ceases to exist. This means that life is really a transformation from heat, and that the living organisms has the power to make such transformation.

Being able to identify life as being a form of the energy we know in science is of more than academic interest. It lets us know that we can apply to life problems the scientific knowledge we have obtained in the physical sciences. We will consider a few of these.

A person is useful in this world according as he is powerful, mentally and physically, and it can be shown that mental power is just as much a form of energy as is physical power. For example, mental power is used in performing mathematical operations. But a calculating machine driven by a steam engine can perform mathematical operations, and such operations are measureable in units of work. What we want to know is how to make people more powerful than they are now, or were before.

Energy can be employed to perform work only when it is at a high potential and is permitted to run down to a lower one. We can visualize this by comparing energy to water. We can use water for power purposes only when it is at an elevation and is permitted to fall to a lower one. Water seeks its level and will not run up hill of itself. It can be raised to a higher level only by the performance of work. Energy also seeks to equalize itself, and can be raised to a higher potential only by the performance of work.

What is just said about energy are things which have been demonstrated positively in the physical sciences. But we can see the same thing in the human being. A man can perform work only because the energy within him is at a higher potential than it is in the surrounding atmosphere. Naturally, the energy within a person runs down (dissipates), as is seen by the fact that a sedentary man gradually loses the power he had in his more active days. And a man can increase his physical powers only by taking physical exercise, which means the performance of work. It is impossible to make an athlete out of a man by simply feeding him and giving him fresh air to breathe.

Perhaps it will be said that we are not interested in making athletes out of average persons, and that athletes are commonly short lived people. The observation is true enough, but it does not meet the argument here presented. Saying that it is impossible to make an athlete out of a man by simply feeding him is putting emphasis on the fact that there is only one way to increase in the system that form of energy which is so plainly observable in the athlete. In June, 1918, the American Medical Association officially recognized "the wonderful mental and physical benefits" which came through intensive military training in the army cantonments.

The short life of athletes is not due to the large quantity of energy in them, but to two other causes. One of these is that the professional athlete commonly has his energy developed in the form of muscular powers at the expense of other powers, with the result that when he is attacked by some disease the energy he has is not so immediately available as it should be. The other is that professional athletes frequently deplete their energy supply to a low point by long continued efforts, and by so doing they approach the point of killing themselves by over exertions. We will consider these things further.

If a man systematically exercises the muscles of his arms and not the muscles of his legs, he will develop power in his arms without developing power in his legs. Similarly, he may, by systematic running exercise, develop the power of his legs without developing the power of his arms. But a person with powerful legs may make himself temporarily unfit for a foot race by continually exercising his arms until he is tired all over. Energy stored in one part of the system is available to help out another part which is under strain, but it is not fully available. A man with powerful legs and weak arms can expend more foot-pounds through his legs than he can through his arms. But if his arms have a given amount of energy normally within them, and he does not operate too rapidly, he can expend more through them in a given time if his legs are powerful than he could if they were weak.

When a person has become exhausted by long continued physical efforts he is much more liable to attack by some bacterial disease than when not so exhausted. Also, when a person has become chilled by long exposure to cold, he is more liable to such attack than when not chilled. These facts show that the removal of energy from the system, either in the form of foot-pounds or in the form of heat units, is the removal of the thing which fights disease. And when a person has been ill for some time, his strong arms and strong legs have become weak, and this is a fact which shows that the energy normally stored in those organs has been transformed into another form and has been expended in fighting the disease. And a person dies from disease when all of his available energy has been expended without accomplishing the desired result.

The causes of death are multifarious, and no one can know in advance when and how he is to be struck. The best security is to have within the system a large supply of energy distributed so as to guard against any kind of attack, and not have it concentrated at special points. The professional athlete has a large supply of energy but it is concentrated in special organs and not properly distributed.

A person develops particular powers by exercising them. If a man at one time draws upon the energy in his legs by exercising his arms, at another time draws upon the energy in his arms by exercising his legs, and at a third time draws upon the energy in both legs and arms by bending his back, he is developing his powers of transferring his supply of energy from one organ to another, and that is a desirable quality in preserving life.

When a person is vaccinated against smallpox he develops a resistance which is specific for a particular germ. When he is vaccinated against typhoid he develops a resistance specific to typhoid germs, and when he is vaccinated against other diseases he develops powers which are similarly specific. All such cases as these correspond exactly to physical training which develops the powers exercised. If a person is vaccinated against a considerable number of diseases he has developed in the cells of his body those powers which fight disease, and he is in a better condition to meet an unknown or an unexpected disease than if those powers had not been developed.

To be healthy and to live long, a man should be an all around athlete, that term being used in a broader sense than it is used in sports. And a man becomes such an all around athlete by exercising, one by one, the various powers he finds in his organism. There is no other way.

# A PLEA FOR CONSERVATISM IN THE SURGICAL TREATMENT OF CHRONIC INFECTIONS OF THE MAXILLARY SINUS*

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At times chronic infections of the antrum of Highmore present a complex problem as to what procedure to follow in effecting a cure of the suppuration. Chronic maxillary sinus disease of a variable duration of time where local treatment is followed by failure to improve or cure or by frequent recurrences constitute an indication for some type of operation. (Loeb, Ayer and Buff.) Improvement means immediate change in the quality and quantity in the discharge from the sinus. Considerable thought should be given each individual case before surgical intervention is undertaken and in a selective type of cases a happy result may be obtained by minor surgical work together with prolonged painstaking after treatment. It is in this class of cases, and they constitute a considerable number, if the disease has not continued too long and consequent pathologic changes are not too extensive that entering into the sinus through the nasal wall, thorough cleansing of the cavity and establishing free drainage together with frequent irrigation afterward, a cure can be accomplished. This is after the manner of Krause by resection of the nasal wall of the antrum under the middle turbinate, but preserving the latter. Entering the sinus is made by puncture, then enlarging the opening with rasp or cutting forceps. The turbinal bone may be fractured if necessary and pushed upward out of the way.

Mechanical cleansing of the cavity stimulates the membrane, producing temporarily a richer blood supply and the kind of fluid used in lavage is unimportant. Complications of maxillary sinus infections are comparatively rare, but if present are bad on account of involvement of the eye, vision sometimes being irretrievably lost very soon. According to Markbrieter, visual field disturbances are frequent in chronic infections. Prompt surgical measures should be instituted upon the first symptom of eye involvment. Unless there are urgent reasons for haste, such as meningeal, eye or symptoms of orbital abscess present, conservative treatment can be tried.

My experience in a series of cases recently along these lines has convinced me that this simple procedure should at least be tried first before any of the more extensive operations are attempted. Barlow reports cures by this method in 47 per cent of cases. A majority of this class of cases are nasal in origin following severe head infections and a few (25 per cent) are of dental origin, the infection reaching the antrum through the alveolar process from a decayed or infected tooth or through an opening following the extraction of teeth. The maxillary sinus is one of the most frequently involved of all the sinuses, because of the added avenue of dental infection. Two teeth, the second bicuspid and the first molar, are the ones usually responsible. Reinfection in these cases occur from the buccal cavity through a fistula or root canal and keeps up the antral trouble. If the fistula in these dental cases becomes lined with epithelium, the opening will have to be curetted and perhaps plastic work be done. If the fistula is not permanent, by the Krause method and continued irrigation and education of the patients themselves in regard to the mouth, the suppuration will subside. Lyons reports cures in 92 per cent of cases with simple measures in which the duration of the disease had averaged nearly a year. Roots of healthy teeth lying within the antrum as a cause of empyema are found to be rare, as shown by the infrequency that they are noted in radical external operations for chronic empyema and also in examination of museum specimens. Davis, after examination of nearly 300 specimens, remarks that in no instance was the mucosa lining the sinus found in direct contact with the root of a healthy root. Where apical abscesses had been present, the intervening plate of bone was absorbed and the root projected into the sinus cavity in direct contact with the over-lying mucosa. Recently reports (Glassburg) of apical abscesses and loss of teeth has been made where infection in the antrum was shown to be the cause.

Pus and diseased mucosa show minor grades of antral disease but these cases may be of comparatively long standing. Periostitis or degeneration and ulceration of the lining membrane will produce pain in and over the sinus. The

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mucous membrane consists of a ciliated epithelium and a periostial lining and is very thin, .02 m.m. (Skillern). The motion of the cilia or the mucous membrane produces drainage through the maxillary ostium. This delicate membrane assumes a thick myxomatous mass of tissue under irritation of suppurative process of recent origin. Skillern places no dependence on fetor or consistency of the secretion as an indication for the choice of operation and says he has seen the foulest antrum heal in a few weeks where a nasal opening with lavage has been done. Where the bone of the antrum is necrotic or where polyps, cysts, septa or malignant growths exist it is obvious that simple measures such as heretofore discussed will not suffice, but one of the radical operations such as the Canfield, Caldwell-Luc or Denker will become necessary. Syphilis or tuberculosis in the patient will require additional treatment of these disorders. Ethmoidal and frontal sinus infection accompanying antral disease will also have to be excluded. Complications following radical operations on the antrum of Highmore consist of lacrymal duct stenosis, numbness, and later formation of apical abscesses, with loss of teeth and post-operative secretion and crust formation. Apical abscesses of the teeth follow radical operations because of interference with the nerve and blood supply of these teeth (Meyers). It is well to keep in mind that lesions of the eye and its appendages are more frequently caused by pathological conditions of the nasal accessory sinus than is generally believed. In the search for focal infections in cases where the cause of a systemic disease is obscure, chronic antral trouble may be found to be a factor, and the possibility that these foci may be found in the antrum where no complaint had been made of nasal symptoms should not be overlooked. Recently (Liebault) the cause of a number of cases of persistent albuminuria have been found to have their origin in undiscovered chronic maxillary sinusitis. In debilitated patients with albuminuria careful examination and puncture of the antrum is advisable.

Among my histories of empyema of the maxillary sinus I have had eight chronic cases, which gave very good results under prolonged irrigation of the cavity after entering the sinus through the nasal wall. In two of these cases which were of dental origin, the fistula through the alveolar process closed quickly by attention to nasal lavage and was in each instance followed by a cure of the empyema. They were, in both patients, cases of antral disease following extraction of teeth. The histories of the other cases vary only as to the length of time the disease has existed.

Case 1. The first case is that of Mrs. S., aged 44 years. Five years ago I performed a radical mastoid operation on the left side for a chronic suppuration of the ear, which she had had since 3 years of age, following scarlet fever. At that time her symptoms consisted of headache, rheumatism, neuritis, general debility, dizziness and pain in the ear. She was greatly benefited generally by this operation and the suppuration from the ear was cured. Two years ago I removed the tonsils because of the return of debility and the presence of pus in the tonsils. She then enjoyed good health until January, 1921, when she caught a severe head cold and suffered from a constant neuralgic type of pain in the cheek. There had been a purulent discharge, with some crusting, from the left nostril ever since this time. She complains of a foul odor from the nose. Tenderness to pressure was present over the left antrum and trans-illumination of that side showed dark. X-ray showed marked increase in density of the left maxillary sinus. Frontals, ethmoids and right maxillary normal by comparison. Temperature was 100. She was extremely weak, very nervous, unable to sleep and in very poor general physical shape. Until I saw her first in May she was having, off and on, acute exacerbations of the sinus trouble. Suction treatment had been carried on intermittently throughout this period. After having obtained her consent, on September 6, under general anesthesia puncture of the antrum was made, the opening enlarged and the cavity thoroughly cleansed. Irrigation with saline solution was made daily for ten days. Twenty per cent. argyrol was injected into the cavity after each treatment. This treatment was continued until September 27 when the patient was discharged and has remained well since that time. The antral trouble had been present seven months in this case and irrigation treatment of the sinus extended over a period of three weeks.

Case 2. Mrs. M., aged 28 years, ten years previous had undergone some bilateral nasal operation by a rhinologist on the turbinal bodies. Six weeks ago following a head cold, pain and discharge of pus began with much odor, left side more involved. Yellow greenish color of the suppuration. Accompanying the nasal trouble were headache, backache and lassitude. Examination shows profuse discharge of pus coming from under left middle turbinate. Trans-illumination shows dark on left side. Patient was not seen again until seven weeks later when she returned stating there had been no return

of the pain until two days before, but free continuous discharge of yellow secretion. X-ray report shows marked increase in density of left maxillary sinus; frontals, ethmoids and right maxillary sinus normal by comparison. Wassermann negative. Temperature 99.8. Nasal examination same as before. Two weeks later, under general anesthetic, antrum was punctured, opening enlarged and much foul, fetid pus washed out. Irrigation continued for 41 days, when patient was discharged, with complete relief of local and general symptoms. The antral disease in this case had existed 15 weeks previous to the operation.

Case 3. Miss M., aged 31 years. Following measles 3½ years ago has had pain, odor and persistent yellow discharge from right side of nose. The past summer she noticed discharge from left nostril and marked swelling of left eye. She has a good deal of crusting and blows from the nose and spits up thick foul crusts. This patient has been in the hands of a number of specialists who have given local nasal treatments and various medicated nasal irrigations. She is debilitated and has lost considerable weight. She has a small cystic goiter, is very nervous, suffers from shortness of breath and claims some palpitation of the heart. She cannot sleep well because of nasal obstruction. Pain is present over and in the region of the antrum and is very severe at times. Underwent tonsillectomy one year ago. On examination I found marked tenderness over maxillary and frontal sinuses of the left side. Temperature 100. There is free pus coming from under both middle turbinates. Trans-illumination shows dark on both sides. X-ray report shows marked abnormal density of both antrums, more so on left side. Frontal sinuses very large, slightly more dense than normal, sphenoid and ethmoid cells clear. On November 26, 1921, under general anesthesia, the Krause opening was made under the lower turbinate on both sides, much thick fetid pus washed out, the left side being found most involved. Irrigation through the nose was continued until Jan. 10, 1922, a period of 45 days, when the patient was sent to Florida where I examined her two months later and found her entirely well, having no discharge from either side of the nose, with an increase in weight of 12 pounds. The antral disease had been present in this case 3 years and 8 months.

The foregoing histories are typical of these chronic empyemas of the antrum which will heal by window resection of the nasal wall with irrigation, and the details of the other cases will be omitted. The ages varied from 17 years to 57 years. Suffice it to say that all eight patients had undergone various forms of treatment, but with no help. The two patients with antral disease of dental origin had been treated by both dentists and rhinologists. All eight patients had positive x-ray findings. The shortest length of time the disease had been present in any case was two months and there were two of these, one had been troubled 3 months, one 15 weeks, one 7 months, one 8 months, one 18 months and the eighth case had had antral suppuration 3 years and 8 months. The period of irrigation following the nasal surgery, before suppuration from the antrum ceased continued from three weeks, the shortest time, to sixty-three days, the longest period.

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## DISCUSSION

Dr. George E. Shambaugh, Chicago: I was very much interested in the report of these cases. The diagnosis of maxillary sinuitis whether acute or chronic presents no difficulties. The question of what to do for these cases is the important one. All forms of treatment from the simple shrinking of the membranes to permit drainage, to the most radical forms of operation are each indicated under certain types. The cases occurring during acute head colds are very common. These are often found when no symptoms indicate their presence. Often the simple shrinking of the membranes in the middle meatus facilitating temporary drainage suffices. The more severe acute cases clear up usually very readily by irrigation, puncturing either through the middle or inferior meatus.

Dr. Welton has emphasized very properly how easy it is to get relief in what appears to be a rather severe case by the simpler measures. I also have been impressed by this fact and have been convinced that the more radical operations, the Denker, and the Caldwell-Luc, are very seldom necessary. Empyema of the antrum of long-standing will usually yield to ventilation, that is by resection of the nasal wall either in the inferior or middle meatus. The old idea that these internasal openings should be near the floor of the sinus was based on the assumption that drainage was the important question. As a matter of fact it is the ventilation that does the work and it is just as satisfactory that this ventilation is in the middle as though it were in the inferior meatus. Even cases where there has undergone extensive hyperplasia of the mucous membranes get well under this simple treatment.

Dr. Edwin McGinnis, Chicago: I was much interested in Dr. Welton's paper because this is a subject that is well worthy our serious consideration. The antrum differs from all the other nasal cells, in that it is the only one that can become infected from other causes than intranasal. The sphenoid, the ethmoid and the frontal are all infected intranasally, but the antrum can be invaded by infection from a tooth. I agree with Dr. Shambaugh that most of these acute cases get well by themselves. Every time they have an acute cold these patients have an invasion of the antrum, but these clear up spontaneously.

I have been very much impressed with the relation of the anterior ethmoid cells to the antrum. Very often when these infections do not clear up by irrigation we have to irrigate the cells higher up. I had a case recently where the antrum kept filling up and repeated irrigation did not make much difference. We found a naso-frontal duct cell which was infected and with drainage of this cell the antrum promptly cleared up.

Dr. John A. Cavanaugh, Chicago: I agree with what Dr. Shambaugh has said regarding an opening, in most of these cases. A few days ago I saw an interesting case in a school teacher. It began with inhaling fumes of a rose. The following day she had itching of the eyes and sneezing, watery discharge from the nose; this continued for three or four days. She then consulted her family doctor who thought it was an acute rhinitis. A few days later she consulted him again, at which time a rash had appeared on the neck. He sent her to a dermatologist, who examined the rash and said it was a superficial dermatitis. He prescribed and said that it might be due to the fur collar she was wearing. Vacation week came along and she went to the country for a week. While there she was much worse. There was no pus, but a watery nasal secretion and burning of the eyes, which she thought to be hay fever. On her return to the city she came to see me. Her eyes were red and she still had the dermatitis on the neck. She had not been wearing her fur collar, still this persisted I used nasal suction and found a clear, watery secretion. X-ray examination showed nothing but a slight blurring of the sinus. She was sent home and told to report in a few days. She did so, complaining of a little pain around the left orbital region. Because of that, I decided it would be well to wash out the antrum. To my surprise, there were about five small globules of pus washed out of the antrum. This did not show on transillumination, suction, or X-ray. Yesterday the rash on the neck was almost gone, the sensation of sneezing, the burning and watering of the eyes had disappeared, but there was still some watery secretion from the nose.

Dr. Willis O. Nance, Chicago, discussed Dr. Welton's paper from the standpoint of one who had recently suffered from acute antrum disease. Dr. Nance was impressed with the amount of pain which accompanies this class of cases. He found that the temporal bone was exceedingly tender and that hot applications give the most relief during the disease. He was also impressed with the large amount of discharge which accompanies the disease just after the acute symptoms have passed. In his own case there apparently were no premonitory symptoms as coryza or sneezing.

Dr. Oliver Tydings, Chicago: I did not get all of the Doctor's paper, but there are some points about maxillary sinus involvement and one is the suction. In all acute cases if you will have the patients put the head in a positon for the drainage of the maxillary sinus and use suction, it offers relief to so many of the cases that I do not find it necessary in many of them even to puncture. In washing out the sinus with the ordinary trocar you give a good deal of relief, and this should always be done first before going to extreme measures. One thing we must remember is that these are pneumatic cells and the use of air will often accomplish all that is necessary. I am surprised that Dr. Nance would suffer all that pain when washing

out the maxillary sinus would have given him relief in a few minutes.

With regard to the treatment of some of these chronic cases, now and then we will find pathological changes that have taken place within the cavity of that antrum that nothing but opening through the canine fossa, going in and inspecting by means of the pharyngoscope, and removing any pathological tissue you find, will give relief. After washing and washing and using air, if all those fail, then I go through the canine fossa and find out what is the matter and remedy the condition.

Dr. George F. Fiske, Jr., Chicago: There are a few points that have not yet been brought out that are very important. I have been unfortunate enough to suffer with chronic catarrh since early childhood, and I find one thing absolutely essential, that I cannot get along without, and that is a strong spray. I use 6 per cent menthol with 3 per cent creosote, with oil of eucalyptus to make it smell good, in a petrolatum base. I find that keeping the nose clear is the only thing that helps me. Removal of the vicious circle is of very great assistance.

I think no one has mentioned the use of 1 per cent mercurochrome. I find it much better than any silver salts. Dr. Church was relieved with one injection of mercurochrome, without any pain. Sometimes three are necessary. I think the main principle is to keep the nose clear, wash out the antrum, and inject any of the modern solutions, preferably mercurochrome.

Dr. Willard Brode, Chicago: There is one form of treatment as an adjunct to cleaning up many of these signs of infection, and that is the use of the quartz lamp. I have used it for a year and a half, and in many cases noticed marked improvement after the treatment. I use the ordinary Kromeyer lamp, starting with two minute exposures at a distance of eighteen to twenty-four inches, and gradually increasing the intensity of the light by making the distance greater, and also increasing the time of exposure. I find that after the other methods clear away the debris, I get good results through the stimulating rays of this lamp. I would suggest that you try it in some of your cases. It has given me excellent results, and I am sure you will not be disappointed.

Dr. C. B. Welton, Peoria (closing): The title of my paper was surgical treatment of chronic antral disease. The point I wish to make in these cases is that in spite of anything and everything you will do in some cases, with radical operation and everything, you will not cure the antrum. In my own city I have a couple of doctors who have been operated on by conservative methods and by radical methods. One was operated upon by Mosher and he still has a discharging sinus. They are very mean things when they have lasted a long while, as these have. Therefore try the conservative treatment first, as good results follow in many of these cases.

I also mentioned in the paper that the other sinuses would have to be excluded, as they certainly will.

I believe, as do the other men who have discussed these papers, that the main thing in these cases is ventilation, but where you have the old chronic cases you have to get rid of the pus and discharge and you have to have an opening that is big enough and you have to have drainage as well as ventilation. I do not believe ventilation alone will cure the case.

As to a cure, I consider the cure when the discharge has stopped and the symptoms are gone. As to the x-ray, I do not place so much dependence on the x-ray picture and think it should be used only as an adjunct to the other procedures. I have found that any acute process in the antrum is likely to leave a shadow that shows afterwards in the x-ray pictures. I have had patients undergo such processes as Dr. Nance has now, and if you ray those cases years afterward you will find a shadow, although there is no chronic trouble.

As to anesthesia, I wish to say these cases were all given general anesthetics, because they were all debilitated. If a patient is in good shape I would only use a local anesthetic, but these cases were all of long standing, all in poor general health, and I had to use a general anesthetic.

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## A MODERN PROGRAM FOR THE TREATMENT OF SYPHILIS*

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Since 1903 when Metchnikoff and Roux successfully transmitted syphilis to lower animals our knowledge of this disease has progressed rapidly. Probably in no other field of medicine have so many remarkable advances been made in so short a time. The three most important discoveries have been the spirocheta pallida by Schaudinn and Hofmann in 1905, the Wassermann test and the arsphenamines. Contributions are continually being made and our knowledge of syphilis and its treatment is being based more and more on scientific facts.

Syphilis is a disease in which the individual as well as the disease must be treated. It is impractical to lay down any definite set of rules for any patient or set of patients. There is no disease that requires quite as much patience and perseverance on the part of physician and patient as syphilis. We know now after several discouraging years that arsphenamine is not the

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agent it was first thought to be; that it requires not one but many injections of this and many more of mercury to effect a cure. We have learned that sodium cacodylate is absolutely valueless in the treatment of syphilis and that K. I. while it is a valuable remedy to be used in the late secondary and tertiary stages, is not a spirocheticide and should not be used as such in the early stages.

We are not doing right by our patient if we do not insist upon some definite form of program to be followed out and followed out conscientiously. A few injections of arsphenamine given haphazardly, and a few injections of mercury or mercurial pills by mouth are almost worse than no treatment at all. The patient feels that he is protected and neuro-recurrences are the result.

It is solely the aim of this paper to lay down a few of the principles with an outline of the program followed out in syphilis as practiced in one of our large medical school dispensaries.

We have in the arsphenamines and mercury the drugs to cure syphilis provided that we start early enough and treat it intensively enough. Arsphenamine is distinctly a spirocheticide and acts probably as an artificially produced antibody combining with the spirochete by means of the benzol ring very much as antibody is bound to antigen. Mercury is probably also a spirocheticide and probably also stimulates immune body formation. At all events both are extremely necessary in any modern method of treating the disease. We have felt that a combination of the two as will be outlined later is far more curative than the use of one alone. The use of mercury should not be neglected because this drug is a valuable one and for years was our sheet anchor.

Our program is guided by the age of the disease. If a patient presents himself with what appears to be an initial lesion, a careful search is made for the spirochete, using the dark field stage. If the organism is found, treatment is immediately begun. Our method is with slight modifications the one outlined by Dr. Ormsby in the *Journal A. M. A.* of July 3, 1920. It is a modification of one suggested by Dr. S. Pollitzer of New York.

The patient is given the first day an injection of .2 gms of arsphenamine, a small dose to guard against any idiosyncrasy he may have to arsenic. Two days later he is given .4 gms and two days after this another .4 gms. This has been the average dose used. It has seemed to us that the size of the dose had a great bearing on reactions. We have gradually increased the dose in some patients and have found in some cases that varying the dose five centigrammes would make the patient feel sick and uncomfortable. After these three injections of arsphenamine he is given mercurial treatment for three weeks. Another series of three doses of arsphenamine given at the same intervals follows this mercurial treatment, and then follows six more weeks of mercury. This constitutes a course and consumes about three months. The patient is then given a rest of six weeks. He reports at the end of that time and is carefully examined physically, especial attention being given to urine analysis, and a Wassermann is made. We have found that the Wassermann in the majority of primary cases so treated will return negative at that time. It will however often return positive again in two or three months if treatment is stopped at that point. He should either be carefully watched or else more treatment immediately instituted. We have felt that in this type of case three or better four such courses should be given.

In the secondary stage cases the treatment is practically the same as has just been outlined. The exanthem fades out, mucous patches disappear and the patient acquires a feeling of well being he has not had in months if he follows out the treatment conscientiously. It is in this type of case that arsphenamine acts almost miraculously. To get and keep the patient serologically negative however he must be given about four such courses.

In treating old cases or cases of the so-called tertiary stage, the program must be altered considerably. We must individualize the patient and carefully ascertain the aim of our treatment, taking into consideration the damage already done to vital structures. Our aim in such cases is not so much to get a negative Wassermann as it is to relieve any chances of infectivity and to carry the patient through a normal remaining period of years without doing too much damage to vital structures with intensive treatment.

It is well to remember when treating these old cases, as Schamberg, Kolmer and Lucke have pointed out, that arsphenamine produces demonstrable effects chiefly on the liver, suprarenals,

and the blood vessels, and mercury on the kidneys and brain.

Cardiovascular syphilis: In this type of the disease and probably many late syphilitics show some signs of cardiovascular involvement, Iodides and mercury are the drugs that should be given preference. Most internists believe that arsphenamine is dangerous in that it may cause rupture of some important vessel by causing too sudden resolution of a syphilitic lesion. They also state that the introduction of a quantity of fluid is hard on an overtaxed circulatory system.

In syphilis of the kidney, which is generally characterized by a high albumin content of the urine with relatively few casts, small doses of arsphenamine are infinitely better borne than is mercury.

Syphilis of the liver should be treated with both arsphenamine and mercury. If jaundice develops it should always be borne in mind that large doses of arsphenamine and mercury conjointly used may cause such jaundice. Early syphilis of the liver and gummata respond readily to treatment and should be treated intensively.

Syphilis of the central nervous system: In this group should be mentioned tabes, paresis, meningitis and endarteritis. There also may be gummata of the brain or cord. These conditions can all be treated with arsphenamine and mercury as outlined above except probably not so intensively. In gummata, myelitis or endarteritis a course of mercury and iodides first is preferable.

As to the value of intraspinous and intravenous methods of treatment of this type of the disease some neurologists favor the intraspinous treatment, others condemn it. In a recent article Schaller and Mehrtens of San Francisco have reported their results in the treatment of 208 cases of central nervous system syphilis. Their conclusions are of great interest.

Intravenous and intramuscular therapy caused symptomatic improvement in the majority of cases. Serologically only 19 per cent. cleared up entirely. This treatment was more efficacious in the meningeal, vasculo-meningeal, and diffuse types. Spinal drainage in addition to the foregoing results impressed us as a definite advance, both in ability to ameliorate the symptoms and in its tendency to improve the spinal fluid pathology.

Intraspinal medication was superior to the intravenous and intramuscular methods in its effectiveness in clearing up the spinal fluid. Forty-eight per cent. of cases became clear through the use of the intraspinal medication compared to 19 per cent. with the intravenous method.

The most useful field for intraspinal therapy is that of the meningo parenchymatous types including tabes. Patients with optic atrophy and with tabes without meningeal reaction received no benefit. Patients with parenchymatous lesions including paresis did poorly, but 25 per cent. of the cases thus treated cleared up serologically and clinically. A remission was at least effected.

In the treatment of individual cases of neurosyphilis it would seem proper to begin with intensive intravenous and intramuscular medication, particularly in vascular, meningo-vascular, and diffuse lesions. Failure to reduce spinal fluid findings to negative after a thorough trial should suggest the advisability of using more intensive methods. Drainage combined with intravenous injections should be the procedure of choice when the facilities for more complicated methods are lacking or when symptoms of increased spinal fluid pressure are distressing. The Swift Ellis method should be reserved for cases resistant to the foregoing efforts.

In our program of treatment we have used for the past year arsphenamine and for mercury have employed soluble mercuric chloride, 1 per cent. in physiologic sodium chloride solution, in a dosage of 35 minims twice weekly, or the insoluble salt mercury salicylate, 10 per cent. emulsion in liquid albolene, in dosage of 10 minims every five days. Arsphenamine has been administered by the gravity method, thus avoiding the painful infiltrations so often obtained by using a syringe. We have used a small glass funnel with a capacity of 100 cc. for holding the drug. It has a rubber tubing attachment and the apparatus can be held in one hand while inserting the needle with the other. The needle gage has been 20. Freshly distilled, reboiled water is used in dissolving the arsphenamine, 20 cc. of water to .1 gm of the drug. We have aimed to consume at least five minutes in giving the injection.

The benefits derived from such a program as has been outlined are many. The patient is rendered non-infectious in a very short time and all cutaneous signs of his disease disappear.

There are however unfortunate complications that do occur and these deserve mention. First are the so-called anaphylactoid reactions, so-called because of their resemblance to acute anaphylactic shock. These symptoms come on either during or immediately after the injection. The patient complains of a sense of constriction about his chest becomes dyspnoeic, the face becomes flushed,

at first a pink, later a dull red, the lips are swollen, the conjunctivae injected and the pulse and respiration accelerated. The injection had best be stopped at this point and the patient allowed to sit up. He soon regains his normal condition but if the reaction persists, 8 to 10 minims of a 1 to 1000 solution of adrenalin chloride may be given. The principal phenomenon of this peculiar syndrome is a pronounced vasoparesis followed by a fall in blood pressure. Schamberg suggests that this may be due to an inhibition of the production or secretion of epinephrin. Suprarenal suppression induces a similar picture. These reactions have been eliminated almost entirely with our more careful methods of giving the drug. An empty gastro-intestinal tract is of value in preventing this type of reaction. It is well to have the patient take a brisk cathartic the night before and have an empty stomach when taking the injection. Then we usually forbid their eating anything for four or five hours after the injection.

Delayed reactions consist of nausea, vomiting, diarrhea, headaches and a sense of malaise and are often present 24 to 48 hours after an injection.

Exfoliative dermatitis is a more serious type of reaction. This consists in at first a generalized erythema of the body surface, generally developing a few days after the last injection. The skin at first is a bright red with symptoms of itching and burning. Later the cutaneous reaction becomes more severe and intense until there is definite weeping with consequent crusting over most of the body surface. These patients suffer severely and are hospitalized for at least three months. In a number of cases we have seen at the County Hospital the patients gave a history of not feeling well after each injection, of headaches, feelings of malaise, and in a few cases of a developing erythema. In fact in all of the cases there was ample warning given the operator that all was not going well.

In clinics in which the patient is given arsphenamine alone or mercury alone for a period of time, that is when the two drugs are not conjointly used this phenomenon has not occurred.

Schamberg consequently believes that it might possibly be due to the conjoint use of mercury and arsphenamine and can be explained in this way. Mercury in vigorous dosage may severely irritate the kidneys and inhibit the elimination of arsphenamine. Within a short time after an injection of this drug most of it disappears from the blood and is lodged in the different organs, the liver especially. If the eliminating activity of the kidneys is impaired it is obvious that the arsphenamine will remain for a longer time and in larger quantities in the liver for which it has a special affinity. Too long a residence in the liver may cause the drug either to become oxidized with the production of arsenoxide or the arsenical radical may become split off and produce the symptoms of arsenic poisoning.

Among the other reactions of serious import are acute yellow atrophy of the liver, persistent jaundice, and encephalitis. Jaundice can be explained in the same manner as exfoliative dermatitis.

Mercury can also be productive of great damage if not watched carefully. While its effects are not quite as dramatic as are those of arsphenamine, it can produce serious nephritis, uremia and death.

It follows then that in the treatment of syphilis we have two exceedingly valuable drugs. Their use is not without some danger. We should therefore use every care and caution in preparing our material for injection, and should ever be on the alert for unfavorable sypmtoms. We should treat every case individually, and submit the patient to frequent medical examinations and urine analyses.

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## DISCUSSION

Dr. John Ridlon: When Dr. Oliver closes his discussion, I would be glad to hear from him something more on the ill effects of arsenic preparations on the blood vessels.

I have had the opportunity to see a considerable number of so-called Charcot's spine following syphilis.

In seeking the cause of it, the query has come up: May it not be due to the evil influence of arsenic on the blood vessels?

Only three or four months ago Dr. Funston of Iowa City reported a case of Charcot's spine, and said that only fifteen cases had been reported in the entire medical literature and only one of those in this country. The statement surprised me so much that I began looking up my cases and expect with the aid of Dr. Berkheiser to report ten or twelve. When a man not having a large practice—and I have not a large practice—in one day sees two cases of Charcot's spine in his office by chance, we are getting more Charcot spines than we used to have forty years ago.

I would be interested in hearing Dr. Oliver comment on this.

Dr. A. S. Hershfield, Chicago: The neurologist is the one usually heard about today in treating neuro-syphilis.

Dr. Oliver is quite conservative. The consensus of opinion among neurologists is that any form of treatment of neuro-syphilis has not been very successful.

We thought when the Swift-Ellis treatment came into effect that we had something. And Swift and Ellis, while still doing it, are not very happy about it. Then there came the modification. Then they tried to inject the medicament high up into the spine, and so forth, and the results have not been encouraging.

We must remember that once the nervous tissue is destroyed for any reason it is never regenerated, especially brain tissue and spinal cord tissue. We only hope to save what we can. But by the time the neurologist gets it, it is pretty well destroyed. There are cases on record where the crises have pretty well subsided under the treatments which they record.

Paretics have shown clearer mentality for a while, but they have relapsed. And if we remember also that paretics have remissions naturally in the course of the disease, a good many of the results have not been due to the medicaments but due to the fact that the remissions come in the course of the ailment.

One of the greatest problems the neurologist has to confront in neuro-syphilis is the superior tabes form. Where there is only an optic atrophy, he doesn't know what to do. Most of the fibres are already destroyed and mercury hastens destruction of whatever fibres are left. Salvarsan is not so bad, but still it has been proven that where there has been a progressive optic atrophy the mercury has destroyed the remaining fibres.

Dr. William Fuller: I would like to ask Dr. Oliver a question: How does he determine when a patient with syphilis is cured? What assurance does he give a patient after the treatment he has outlined here, that he may feel that further observation will not be needed?

No methods by which we aim to determine a cure of syphilis are, as far as I understand them, reliable. A patient who has never had syphilis, or who has had it and been cured, may present a positive Wasserman. Again, a patient who has syphilis may repeatedly show a negative Wassermann.

I ask these questions because the surgeon frequently meets instances which are unquestionably surgical, but yet lying behind them is also unquestionably uncured syphilis. Clinical histories, and clinical manifestations are notoriously misleading; and with the Wassermann test falling a little in popularity every year, seem to leave us unable to say just when a syphilitic patient may safely have judgment passed upon him.

Dr. Albert E. Mowry, Chicago: I am glad to see Dr. Oliver rather favoring soluble mercury, and getting away from arsenic. I know what his feeling is in the matter. I think we should discourage the use of arsenic in the treatment of syphilis. I don't think we cure many cases of syphilis by the use of arsenic, and the damage we often do with the use of arsenic is unjustifiable.

I know that with the use of soluble mercury, such as he suggests, used carefully, intelligently, intramuscularly, most cases are cured, so far as we know what cures mean in syphilis.

Arsenic, in my experience, has been very unsatisfactory. Dose after dose only delayed the cure I should have had by the use of mercury properly injected. Intravenous injection of mercury I don't think will do the work that intramuscular injection will do. Intramuscular, properly injected, will cure nine cases out of ten. I am sure of that in my own practice where I have had a chance to watch the cases.

I am glad to see Dr. Oliver come back to soluble mercury. The quick action of mercury gives you an action that you can't discount. The mercury is out of the system in forty-eight hours and the system is ready for another dose.

The first dose of mercury should be small, because you sometimes start something—those are the cases where you get up in the night and the patient wonders whether he is going to die.

I have some cases of tabes in the clinic now, that have been under observation for five or six years, in very good shape by the use of injections of soluble mercury intramuscularly.

Dr. Edward A. Oliver, Chicago (closing): I am very sorry I can't answer Dr. Ridlon's question. I don't know enough about that subject.

In answer to Dr. Hirshfield, I think the best treatment of neuro-syphilis is the prevention of neuro-syphilis by early and intensive treatment.

What I hoped to emphasize was the need of some definite program. We all know that many a patient is given an injection of arsphenamine, when he has the price to pay for it, and no definite program is followed out.

I think there are some very interesting facts given by the authorities I cited. I was very much impressed with the article published in the January number of *Archives of Neurology and Psychiatry*. They thought it best for everybody concerned to start with intravenous and intramuscular treatment first; and then, if the patient did not improve as rapidly as could be expected, to resort to more complicated treatment.

There is no doubt that some cases of nervous syphilis, whether it is only temporary, do improve on

treatment of ordinary syphilis. And there is no doubt that lots of cases of tabes have improved under the Swift-Ellis method of treatment.. I do not think for paresis anything is of much value.

I am well acquainted with Dr. Mowry's view of the subject. He and I have been in the Army together. We have argued it many a time. I don't altogether agree with him. I think mercury is a very valuable drug. Arsphenamine is also a valuable drug. The two should be used together. I believe if we were to use one drug alone I would prefer mercury, but the two are much better than one alone.

## THE OPEN AIR SCHOOL AS A FACTOR IN PREVENTIVE MEDICINE*

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Open Air Schools have been established in sufficient numbers and over a long enough period of time so it is possible to draw some conclusions as to their value. The teachers, physicians, nurses, and social workers, who are occupied in carrying on the schools, almost without exception, declare that the extra effort and money required to maintain such schools is well worth while.

The first School of this type in our country was opened in Providence, Rhode Island, in January, 1908, for the benefit of pretuberculous children and those suffering from heart trouble. This school was planned after the Open Air School started to lessen the time of morbidity for convalescent children, in Charlottenburg, Germany, in the year 1904, where the treatment worked so well that to the surprise of the authorities, the children improved mentally as well as physically.

The New York Board of Education started some twenty open air classes throughout the city in 1909. In Chicago, in 1909, The Chicago Tuberculosis Institute and the Board of Education started your first open air school. That fall the Elizabeth McCormick Memorial Fund gave liberally to help maintain an open air school and helped develop your present system. Since that year, because of the quick spread of the fresh air school idea, the number has grown rapidly all over the country manifestly filling a long-felt want. It is hard to get exact numbers; however, an estimate late in 1921 gave over 3000 such schools in the United States.

The propaganda for open air schools has been, almost without exception, initiated by tuberculosis societies or individuals especially interested in tuberculosis in children. But the regimen of such schools and the special attention given to pupils by physician and nurse, has quickly made them popular for other types of subnormal children. Private philanthropy and foundations have aided financially in opening the schools and later the expense has been taken over either entirely or in greater part by the local boards of education.

The Massachusetts Department of Public Health made a survey throughout the state, of open air schools and open window school rooms in 1919 and 1920. The results of the survey showed that the school and health authorities varied widely in opinion as to their value, ranging from strongest approval to strongest disapproval; this wide difference of opinion being due apparently to the fact brought out that there is no definite standard of regimen in the Massachusetts schools; all providing fresh air, some, in addition providing food, and some providing food and rest with the fresh air. The type of child chosen for these schools was also various; some schools working to prevent only communicable diseases; some to overcome malnutrition; some to help any subnormal child and some to keep well children well. The medical examinations also differed in frequency and scope. In the open window rooms there were 1000 well children in the effort to keep well children well. There were 1137 subnormal children in open air schools and 690 in sanitorium schools. A total of 1827 children in the state, in fresh air schools or three-tenths of one per cent. of the total school population of Massachusetts.

The New York City monthly bulletin of the Department of Health for June, 1921, is unqualifiedly favorable to the plan. Their number of children in open air classes is 3110. This large number cared for with satisfaction to the authorities carries certainly great weight. But there is a uniform standard for these classes.

The Chicago open air work has been of such a type that it has been a pattern for the rest of us to follow and its results have been uniformly favorable.

The plan for the equipment of an open air school has become more definite with experience

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till now the country over there is a certain standard that is expected. First:

For fresh air:

That at least three sides of the school room or building from a few feet above the floor should be open. Windows or curtains may shut in a part of this open space when the weather is stormy.

For food:

That a hearty hot dinner be provided the pupils, a morning lunch and glass of milk before the pupils leave school for the afternoon is given if possible.

For rest:

At least an hour is passed lying on cots in the open air school room. This rest time to be either just before or just after dinner, and often a half hour is added just before dismissal. There must also be provided extra warm clothing for these children, the quality and quantity depending on the climate.

The classes are small, the maximum is not more than 25 pupils for one teacher. So individual attention may be given and the quality of the mental work done by the children is that expected of normal children though the quantity may or may not reach the standard, according to the kind and extent of the subnormality of the indivi dual pupil.

Medical inspection and the services of a school nurse are as essential as teachers in open air schools. The open window rooms need much less equipment; the windows are hung so they open into the room from the top of the sash to provide the maximum amount of air and the minimum amount of drafts. The usual heat is turned into the room and it is only necessary for the children to wear their ordinary outdoor wraps. As a rule, there is no rest period arranged for and no food provided. This type of room is admirably adapted to keep well children well.

Open air sanitorium schools are of quite a different type—as they are for children so ill they need hospital care and are usually open cases of tuberculosis. Oddly enough the idea of such a school came from a group of children themselves, who to hasten their convalescence were sent to an open air hospital on a ferry boat in New York harbor. The little folks planned to strike if not provided with a teacher. The pupil of a sanitorium school has its mental work prescribed as well as medicine by the sanitorium physician and each one is under the daily supervision of physician and nurse as are the other patients of the hospital.

Children are chosen now for open air schools for many more ailments than formerly, though probably there will always be more of those suffering from respiratory diseases, than any other one illness. The following list of causes that take children into an open air school will give an idea of the scope that that type of school may play in preventive medicine—open cases of tuberculosis are excluded as are other cases of contagious diseases:

Arrested tuberculosis of the lungs.

Suspicious of tuberculosis.

Contacts of open tuberculosis cases in the family.

Gland and joint cases of tuberculosis in the non-contagious stage.

Chronic bronchitis with or without emphysema.

Heart disease except those cases accompanied by nephritis.

Anemia.

Convalescence, especially from pneumonia, pleurisy, empyema, influenza, infections, operations.

Spinal curvatures.

Nervous disorders not chorea.

A number of children are included who are suffering from removable defects as bad teeth, diseased tonsils, and enlarged adenoids.

Eye and ear defects—troubles that when adequate medical inspection of our public schools is carried out, generally, will be looked after in the ordinary school.

Malnutrition without some accompanying ailment is not considered a sufficient reason for putting a child in the open air school.

The mentally deficient child, who is not ailing, does not belong in such schools. He should receive what he especially needs in the ungraded room.

It has been estimated that the number of children who would be benefited by the open air school regimen is from 3 to 5 per cent. of the total school population of a community.

The concrete example I wish to give of the preventive medical work done by the open air method is that of our school in Jacksonville, Ill. This is a town of 16,000 inhabitants with a school population of 2,200. Taking 3 per cent. of this number, we should have 66 pupils yearly in our school; however we have afforded so far,

only accommodation for 45. The school was started on January 7, 1914, through the initiative of the Tuberculosis League and the hearty cooperation of the school board and the town.

The following resumè of the medical work done in the school is of the last three years. There has been an average yearly enrollment of 46 children. The length of time for each pupil in the school has been from one-half to three years. Seven have been in the three years, 36 two years, and 37 one year, the others at varying periods between one-half year to three years; there was a total of 87 different pupils; of these 16 are colored. The pupils have been admitted and dismissed only by the advice of the medical director. The ages of the children have ranged from 6 to 15 years. The cases cared for have been:

Tuberculosis 22: arrested pulmonary tuberculosis 17, joint tuberculosis 3, gland tuberculosis 2.

Contacts 47: Of the contacts, 17 show definite signs of tuberculosis, 22 are suspects, 8 show no signs or symptoms of tuberculosis.

There are 8 who are suspects but not contacts.

As the diagnosis of tuberculosis in children is more difficult than in adults, so standards evolved for the examination of children are of great value. In the method of examination published by the National Tuberculosis Association, which was used, dependence was put on the following symptoms:

Loss of weight and strength.
Fever.
Presence of râles not essential.
Altered breath and voice sounds.
Dullness parasternal and interscapular.
D'Espines sign.
Examination of sputum.
Exposure.
Skin tests—Von Pirquet, Moro.
Cough.
Rapid pulse.
X-ray: Roentgenoscopic examination and stereoscopic plates.

(Our Board has not been able to afford the stereoscopic plates.)

The preventorium cases have included the following maladies:

Heart trouble.
Anemia.
Chronic bronchitis.
Chronic bronchitis with emphysema.
Rickets.
Hereditary syphilis.
Impetigo.

There were 62 Roentgenoscopic examinations made through the kindness of Doctors Chapin and Cole. Thirty-seven of these observations seemed to us to show a similar diagnosis as that made by the physical examination; 21 observations showed more marked signs of disease than were discovered by physical signs and in 4 children the Roentgenoscope showed less disease than by physical examination. We were quite pleased with the results of the Roentgenoscopic work until we read the first report of the Committee of the National Tuberculosis Association on X-ray findings in the chests of children when we learned that such experts as Doctors Dunham, Pancoast, and Baetjer said that they did not know as yet, how a normal child's chest should look.

Forty-five sputum tests were made, all negative. Of the skin tests, 52 Von Pirquets were made; 39 were negative, 11 positive, and two not read. I have no explanation of the large number of negatives. Certainly the usual experience is that there are many more positives than negatives in children of school age. First it was thought that the tuberculin was at fault, so we bought some from a different firm but with the same results; the nurse had been giving the test, later the doctor tried giving it, both nurse and doctor reading the result, yet with the same proportion of negatives; then we sharpened the scraper, still with the same results. Eighteen Moro tests were given; 10 were positive, 7 negative, and one not read. D'Espines sign was almost always positive; suggesting that it may be possible that the bronchial glands in childhood are normally large.

It was the plan to get rid of all removable defects of each new pupil as soon as possible after admittance to the school. The most frequent one was bad teeth—the next, diseased tonsils and enlarged adenoids—our dentists and specialists have looked after these defects except when the parents have refused to allow such care. The orthopedic work has been excellently done by Dr. East of the State Department of Health, in cooperation with the local surgeons. The defec-

tive hearing and defective vision cases have been seen by specialists and treatment and glasses provided when indicated. That is, the children have been put into a condition where they are "free to gain" early in their stay in the open air school. This sounds as though 100 per cent. of the removable defects were cared for. This is not the case as we have the usual number of parents in our town ruled by various cults, whose ways are not always the ways of scientific medicine, but certainly most of the children have had their worst defects cared for.

The results of the open air school life on the almost universally present malnutrition in the pupils is shown by a study of the measurement and weight charts. Seventy-eight of the 87 children gained each year from 3 to 12 lbs.; a child 8 to 11 years old should gain four and a half pounds yearly. Over half, 48, gained the four and a half pounds or more; two are over weight; 3 lost, the greatest loss being one pound; 4 remained the same weight. Those who lost or did not gain had some illness or were in families from whom there was no cooperation and the social conditions were deplorable; the services of a trained social worker are a great aid in conducting an open air school. In the course of the 3 years, 42 of the 87 pupils were considered well enough to return to the regular schools. From the opening of our school, it has benefited by mental clinics held first by Dr. F. P. Norbury and latterly by members of the staff of the Jacksonville State Hospital.

To draw conclusions from such a small number of pupils as 87 is not safe, yet as one studies the records of these children, it is plain that a great deal has been accomplished for them. The physical condition of 7 of them has been such that they could not have been in any other school. Those that had arrested tuberculosis have had no recurrent attacks. The contacts and suspects were so built up that apparently they are safe. The heart cases have had an opportunity to make the necessary compensation. Lessening the time of convalescence is a great factor in helping children to get their education. Anemia and malnutrition have been overcome simply by the hygienic living, rest and wholesome food.

To get the removable defects cared for is far easier for pupils of the open air school than for those of the regular schools.

The greatest accomplishment of this type of school is that it teaches its pupils a regimen that not only helps them in their present state of physical unfitness but will help to prevent future disability.

Another lesson it has taught is to give the normal child a more hygienic school life. That is, the study of the subnormal child and his needs have shown us that the usual child needs more fresh air, more rest, and often more and better food, and less nervous strain.

That medical inspection of all schools would help to prevent defects forming in the children or if formed, that they may be cared for early. This lesson has been greatly emphasized by the knowledge that came through a study of our draft army—20 per cent. of our young adults were refused by the army because of ailments that might have been removed in early school age.

The medical ideal for an open air school should include the treatments necessary to prevent the diseases that can be avoided such as: typhoid, diphtheria, and smallpox. Our own experience with smallpox forced home this lesson. One year we had 26 cases of smallpox in the county and we determined that every child in the open air school, at least, should be vaccinated until protected. One of the children by accident escaped vaccination; and that unfortunate child contracted the disease, the only one in the school who had it. As we are in the goiter region, iodine should be given the pupils Fall and Spring after the plan worked out in Akron, Ohio.

What has been accomplished toward preventive medicine by the open air school is only a beginning, that one hopes will lead to the time when compulsory education will not mean a spreading of contagion but a means of prevention of disease.

## DISCUSSION

Dr. Wilson Ruffan Abbott, Surgeon Reserve, Fort Bayard, N. M.: The part I wish to discuss is the D'Espine's sign, which is accepted as being of considerable value. The explanation given that this sign is due to enlarged mediastinal glands is not, I believe, in accord with sound physics. You will get D'Espine's sign if the enlarged glands have been followed by fibrosis, but with enlarged glands that are soft, you will not get a D'Espine's sign. In other words, it is indicative of trouble beyond the point of the sign itself. I think that is something that every physician ought to continually bear in mind in evaluating the sign. I do not think it is necessarily due to the fact that there is a large or active gland transmitting the sound. That

is not sound physics; it will not stand analysis unless you consider the gland as having passed to the stage of fibrosis.

Dr. W. B. Metcalf, Chicago: I am much interested in the paper just read and wish to compliment the Doctor on her broad survey of this important subject, namely, the observation of school children with a special reference to tuberculosis. I feel that in this new branch of preventive medicine we are getting at the root of one of the best fields. Several interesting points were brought out. Dr. Abbott has discussed one and another was the Doctor's experience with tuberculin and the von Pirquet test. I am surprised, as she said she was, that she did not in these cases which evidently had definite physical findings procure a definite von Pirquet. The only explanation to my mind would be based on one of two things: The question of the tuberculin, but she said she tried many makes. After several years' experience with tuberculin I have not yet become enamoured with the American product. My experience has been that the American product has not equalled the foreign product. We do know that in cases of advanced tuberculosis we may not have a tuberculin reaction. There are two conditions in which you will not get a tuberculin reaction,—one in the absence of tuberculosis, and the other in the presence of massive tuberculosis. That may explain it, but I would favor the view that it was the tuberculin used rather than to doubt this specific diagnostic aid.

Dr. Josephine Milligan, Jacksonville (closing): Just a word about D'Espine's sign. Some ten years ago when we first began using D'Espine's sign we thought that it always meant that the bronchial glands were in the fibroid stage of tuberculosis, but we know now that the sign may mean that the glands are in the fibrous stage of any infection. Our children were not given the von Pirquet test unless they were under ten years of age; over ten we used the Moro test.

## THE MAKEUP OF THE NEUROTIC*

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This very condensed presentation of my views on the makeup of the neurotic is in harmony with the views of such students as Beard, Weir Mitchell and Dercum, as well as those of foreign authors, especially English and French, who have followed in the footsteps of Beard. My views agree in certain respects with those of such psychopathologists as Dubois and Janet in France, Alfred Adler, the psychoanalyst of Vienna, and our own Boris Sidis. Many of the traits mentioned by Freud, Jung and others are but superimpositions upon the fundamental makeup as here described.

*Read before the Chicago Neurological Society, March 16, 1922.

*Definition of Terms.* By the "makeup" I mean the constitution, with special reference to the dynamic or driving forces which make the neurotic what he is. By "neurotic" or "nervous" person I mean an individual with a pathologically or abnormally sensitive or irritable nervous system, not due to gross organic disease within or without the nervous system.

I shall discuss more particularly the congenital neurotic, but nervousness or neuroticism from other causes produces similar symptoms, generally in less pronounced degree and for briefer periods.

The difference between the neurotic and the normal is one of degree in sensitiveness or reactivity, with the superadded manifestations mentioned later. Otherwise both persons are the same.

*Thesis.* The main contention in this paper is as follows: All of us are in a state of unstable equilibrium. The neurotic is in a state of relatively greater unstable equilibrium than the average person, is subject to disequilibrium more easily, more frequently and more markedly than his average fellowman, and must struggle for poise and equilibrium more constantly, vigorously and persistently. The problem reduces itself to a study of the causes and manifestations of the disequilibrium and of the efforts to gain poise and equilirium. The causes of nervousness will not be discussed in this paper.

### THE NEUROTIC'S DISEQUILIBRIUM

The neurotic's disequilibrium or lack of balance is shown by the following traits: 1. Relatively increased nervous instability. There is over-sensitiveness, over-reactivity, excessive impressionability, undue irritability, abnormal responsiveness, or pathological excitability. This is nervous system irritability at one or more levels in the nervous system. A typical example of this over-responsiveness to stimuli is seen in the neurotic's disturbed equilibrium from noise or sudden or excessive stimulation, irritation or shock of any sort, internal or external. 2. Oversuggestibility, which may be general or special. If general, the oversuggestibility may lead to excessive credulity and uncertainty, overflow of ideas with multiple tendencies and resulting mental conflicts, indecision, doubts, scruples, distractibility, circumstantiality, mental confusion,

and the desire to do too many things at one time, even to see, know, do and be everything and everywhere. Special suggestibility leads to marked habit formations, with fixations, stubbornness, singletrackmindedness, and excessive domination by ideas. 3. There is a greater than the average lack of control, restraint, domination or direction of self, with relatively deficient powers of inhibition, suppression or repression. This may show itself in the patient's thinking, emotions, speech, behavior and decisions. 4. Nervous and mental excitability exist. It produces impulsiveness and explosiveness. Very characteristic and troublesome is the tendency to hurry and rush. This is responsible for the tendency to or craving for the immediacy of execution of ideas, wishes, desires or impulses, with consequent impatience and jumping to conclusions, expression or action. Associated with this we find the tendency to anxiety, worry and emotionalism on slight provocation and of excessive degree. In other words, the neurotic is overcharged, driven too fast or powerfully by ideas, with resulting unrestrained activity and overintenseness. 5. Fatigue results at one or more levels in the nervous system, producing functional symptoms, which may be visceral, skeletal, cerebral, intellectual, emotional, or moral (will power). 6. Nervous and mental tension, stress or strain is felt by the patient, with feelings of unrest, uneasiness and restlessness, evidences of which are seen in the patient's behavior and on examination (fidgetiness, constant wasteful bodily motions, picking nose or lips, biting the nails and the like, with exaggerated knee jerks, and tremor of the extended fingers). 7. Awareness of these conditions becomes more and more annoying, so that as time goes on the neurotic may develop feelings of insufficiency, incompleteness, unreality, strangeness, incapacity, insecurity, helplessness or inferiority, and on this groundwork there may be built up marked self-consciousness, indecision, interrogations, doubts, scruples, obsessions, fears, depression. 8. Because of this, and because of the fundamental oversensitiveness and tendency to over-reaction, difficulty of adjustment or adaptation to life results and revolves about one or more aspects of life: (a) physical health (visceral or skeletal); (b) nervous or mental condition; (c) moral-ethical-religious conflicts; (d) social or human contacts or relationships; (e) personal-domestic family problems; (f) politico-economic issues; and (g) special wishes, desires or ideals may be the nucleus of the conflict, with a struggle between the needs, ambitions or goals, and the possibilities, handicaps or reality. 9. Fears and convictions of pathological type, especially concerning the physical or mental health, are common.

### THE NEUROTIC'S STRUGGLE FOR POISE AND EQUILIBRIUM

1. The neurotic struggles to flee from the possibility of disturbed or disequilibriated states of the sort above mentioned, endeavors to hide his weaknesses, defects, handicaps, fears or strange feelings from others, and battles for bodily and mental poise, harmony, balance, stability, equanimity or equilibrium, call it what you will.

2. He employs various ways and means, frequently bizarre, and in his efforts he often goes to extremes or excesses because of over-reaction and wild, frantic, panicky, undirected struggles to gain his ends, with certainty and as quickly as possible.

3. Adjustment goes to extremes in the direction of flight or fight. Flight may lead to (a) so-called hysteria, with blind, unplanned simulation of visceral or skeletal disease; (b) exaggeration of or deception concerning the actual condition or situation; (c) such behavior reactions as excessive timidity, shyness, inaccessibility, fears, taboos, miserliness, self-isolation, self-pity, cringing, self-abnegation, depreciation and accusation, passivity or non-resistance, asceticism, depression, even to self-effacement (suicide). Fight may result in (a) depreciation of others, with hate, anger, jealousy, spite, bitterness, and the rest, with fault-finding, blaming and accusing others; (b) expansion of self—overproud, over-bold, bully type, boastfulness, etc.; (c) over-altruistic; and (d) psychoses of more pronounced degree, especially paranoid trends (ideas of grandeur or self-esteem with delusions of persecution).

4. Marked egotism may follow, with morbid introspection, self-observation, self-absorption and self-analysis.

5. The struggle to avoid possible or actual annoying states and gain, preferably in one bound

and for all time, satisfying states, with poise and equanimity as the end, results in the adoption of one or more of the following definite means: (A) pharmacologic—habit or non-habit-forming drugs, including alcohol and morphin; (B) physiological—relaxation schemes, rest, diet, hydrotherapy, physical training, electrotherapy, massage, osteopathy and the like; (C) psychological—(a) medical, such as explanation, persuasion, re-education, hypnosis, analysis; (b) non-medical, as seen in the so-called health and faith cures (Christian Science, New Thought, etc.); (c) general philosophic viewpoints—religious especially; (d) false or extreme goals or ambitions—vague searching for an indefinable acme of serenity, certainty, security, perfection, health, wealth, happiness, freedom, power, equality, normality, pre-eminence, superiority, omniscience, or omnipotence; (e) peculiar habits to control the tendency to hurry and avoid annoying feelings, such as walking or talking too slowly; (f) excessive cravings or tendencies to action—such as abnormal desire for change and variety, vague and constant cravings for sensation and excitement, mysticism, cultism, and the like.

### THE ROLE OF MENTAL CONFLICTS

The neurotic or irritable individual is more apt to have excessive and prolonged disturbing mental conflicts, which are then the result and not the cause of the neurotic condition. But mental conflicts may of themselves produce nervous upset or aggravate the neurotic makeup or traits, a vicious circle resulting.

Proof of the truth of the above conception of the neurotic constitution is found in the daily behavior of our nervous patients and in their own descriptions of their feelings, impulses and behavior. It is seen typically and beautifully in the life and works of the great philosopher, Herbert Spencer. Spencer, as he himself shows in his Autobiography, was a profound congenital neurotic. In his "First Principles," which contains the basis of his synthetic philosophy, he stresses equilibration or integration as the main tendency of evolution. Herbert Spencer's views apply to the universe, including human beings, and just as much to the neurotic, who is but an exaggeration, inflation, magnification, or caricature of the average or normal.

## THE REVIVAL OF ARTIFICIAL PNEUMOTHORAX

EUGENE F. TRAUT, M. D.
OAK PARK, ILL.

After a brief period following Murphy's work in 1898, the therapeutic production of artificial pneumothorax fell into the discard. The recent American and foreign literature, however, indicates that it again is being rather extensively employed.

It is not easy to classify the indications for this procedure as absolute and relative, because authorities differ and each case is a law unto itself. Most of its advocates agree that it should be used for an indication that is primarily unilateral. That is to say, one should put at rest the bleeding lung, the actively infected lung and the lung with the large toxic cavities.

If one can determine the bleeding side in the presence of considerable hemorrhage, pneumothorax should be induced. The bleeding lung is thus put at rest and clotting is favored. With bleeding of small amount, however, as in the usual hemoptysis Hansen[1] advises waiting until all blood has disappeared from the sputum.

Almost all the men who use pneumothorax unite with Harms[2] in saying that cases of early unilateral tuberculosis should be "gassed," but he goes farther and says that early bilateral cases with most of the changes in one lung and bilateral cases in which only one lung has an active process should also receive the treatment. In some of the European centers pleural effusions are being aspirated and pneumothorax follows. Pneumothorax is also being used abroad to keep ambulant cases at work and to make invalided cases ambulant.[3]

That the procedure is still far from being standardized is indicated by the varied conditions which the different authorities consider essential. Most are agreed that rapidly progressive cases are not good subjects. A pleura obliterated by adhesions prevents the desired collapse, and if only a partial pneumothorax is secured, localized atelectasis results and is followed by abscess.

1. Hansen Allgemeine Betrachtungen über ambulante Behandlung Tuberkulöser mit künstlichem Pneumothorax. Med. Klink, Dec. 2, 1920.
2. Harms: Statistik der künstlichen Pneumothoraxtherapie für die Jahre 1912-1919. Beiträge zur Klinik der Tuberculose. 1920.
3. Dorn: Pneumothoraxtherapie und Landversicherungsanstalt. Beiträge zur Klinik der Tuberculose. 1920.

Hansen is the only one who mentions mild hemoptysis as a contraindication.

Pneumothorax profoundly alters the respiratory-circulatory physiology. When one introduces a gas into the thorax he is not affecting one part of the chest to the exclusion of the rest. The mediastinum in man is not rigid and thus the gas introduced affects not only the punctured side but the closed side as well. This explains why we cannot safely produce an open pneumothorax except where the pleura is thick and rigid or bound down by adhesions.

Artificial pneumothorax causes a decrease in aerating surface by producing atelectasis in one lung. The change in intrapleural pressure not only narrows the small vessels in the lung but also compresses and kinks the great vessels in the mediastinum. There is a loss of whatever suction-effect the expansion of the chest has on the venous blood. However, the "gassed" lung is usually not entirely atelectatic. In the first place there are usually a few adhesions preventing collapse. These are usually apical, the very region in which collapse is most desired. Secondly, even where atmospheric pressure has been obtained there is usually enough difference between the pressure at the height of inspiration and that at the completion of expiration to cause the affected lung to inflate somewhat. The ensuing circulatory difficulties are not entirely clear, but we know that it is the difference normally existing between the pressure in the pleural space and that in the bronchi which distends the alveoli. If the alveoli are not distended or are even compressed by a positive pleural pressure, then it requires more force to maintain the capillary circulation. Just how much effect the deflection of the mediastinum has upon the emptying of the superior cava or how much the depressed diaphragm hinders the emptying of the great abdominal veins is still unknown. These hindrances, however, are not so great that slightly greater cardiac effort will not overcome them. A hypertrophied heart is a frequent finding in cases of long-standing pneumothorax.

Immediately after the induction of a pneumothorax the blood in the left ventricle shows a marked increase of carbon dioxide and a lowered oxygen tension. The excess of carbon dioxide is quickly reduced by raising the respiratory rate but the oxygen again approaches the normal only after the collapsed lung has undergone fibrosis so that it no longer receives any considerable quantity of blood.

The fact that the normal pleura absorbs 50 cc. of the injected air per day[4] governs the dosage. Enough must be injected to eventually secure and maintain collapse, but it must not be injected so rapidly that it will not allow the patient to accommodate himself to the altered physiology described.

Physical examination is indispensable in determining suitable subjects but the greatest reliance is put upon the fluoroscope. This instrument shows us the presence and extent of adhesions, the pulmonary lesions, and throws light upon the thickness of the pleura. Many introduce the needle under the screen so as to avoid the pleural adhesions. These adherent areas are especially to be avoided because they predispose to puncture of the lung and this often results in pyothorax.

Hemorrhage and embolism are among the other feared complications. Many of the fatalities formerly ascribed to "pleural shock" are now attributed to embolism.

The recent results with this form of therapy deserve careful consideration. Kahn[5] markedly improved ten of twenty consumptives and secured symptomatic improvement in several hopeless cases. Hansen had universally good results, and Harms[2] who gives the statistics of a large clinic for seven years, demonstrates its value in relieving symptoms and aiding recovery. Dorn[3] who did his work with ambulant patients, has had very satisfactory results in keeping his patients at their vocation by means of pneumothorax.

The revival which we are witnessing is attributable to the use of the fluoroscope and a more careful selection of suitable cases.

104 N. Oak Park Avenue.

4. Gammons: Important considerations in the Administration of Artificial Pneumothorax. J. A. M. A. Jan. 21, 1921.
5. Kahn: Use of Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis. Texas State Journal of Medicine, Dec., 1920.

## DEFECT IN MEDICAL EDUCATION

Dr. Bayard Holmes says: There is no medical school in which doctors are educated—in some schools they make inspectors, in others they make laboratory experts and in others good bookkeepers.

# ILLINOIS MEDICAL JOURNAL

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DECEMBER, 1922


## Editorial

### EVERY DOCTOR SHOULD HELP IN THE CAMPAIGN OF PUBLICITY

As we go to press a letter from the officers of the State Society is being sent out to every physician in Illinois soliciting funds for the purpose of carrying on a lay publicity campaign through the newspapers of the State.

This campaign is being pushed in compliance with a resolution of the House of Delegates of the Illinois State Medical Society passed at the 1922 meeting. Every physician and surgeon in Illinois is asked to co-operate and is needed in the campaign. The campaign cannot be prosecuted without funds. It must be supported by popular subscription, for the reason that the treasury of the State Society is without the needed money. It is hoped that every doctor will subscribe to this worthy cause.

Pitiless publicity is the cult killing corrosive!

Practical ethical publicity is the redemption of the profession. Medicine has sat silently for too long.

For the sake of humanity, let this campaign flourish.

### HOSPITAL STAFF HELPS FINANCE THE JOURNAL

The following resolution passed by the staff of St. Joseph's Hospital of Bloomington, Ill., can be profitably imitated by other hospitals.

WHEREAS, The ILLINOIS STATE MEDICAL JOURNAL is the official organ of the profession of Illinois and its existence is necessary to the welfare of the profession of Illinois, and

WHEREAS, It is representing the medical profession not only of Illinois, but of other States in a worthy, competent and meritorious manner,

*Therefore, be it Resolved,* That we, the members of the St. Joseph Hospital Staff Organization agree to buy such supplies as we use from advertisers in the ILLINOIS MEDICAL JOURNAL and that we further agree to specify on our prescription blanks, drugs and supplies prepared by advertisers in the ILLINOIS MEDICAL JOURNAL when possible so to do. That we will use our best endeavors to induce hospitals to buy their supplies and equipment from the same source.

The above resolution was passed by the St. Joseph Hospital Staff Organization, Bloomington, Ill., on Monday evening, October 2, 1922.

ALVIN KELLER,
Secretary.

## THE A. M. A. BECOMES AN AUTOCRACY

ONE MAN DOMINATES THE ORGANIZATION, WHILE THE HOUSE OF DELEGATES PRESERVES ONLY PERFUNCTORY POWERS AND THE RANK AND FILE HAVE NOTHING TO SAY IN THE MATTER.

THE JOURNAL, WHICH IS THE PROPERTY OF THE ASSOCIATION, ABSOLUTELY CONTROLS THE ASSOCIATION TO WHICH IT BELONGS.

1. The A. M. A. is today a one-man organization.

2. The House of Delegates of the A. M. A. stands today divested of power, except the perfunctory privilege of electing a Board of Trustees.

3. The entire medical profession of the United States, in so far as its organization is concerned, is today at the mercy of one man and a Board of Trustees that is subservient to him.

4. The powers vested formerly in the House of Delegates have been insidiously arrogated by the Board of Trustees through shrewd parliamentarianism.

5. The Journal of the A. M. A. is the property of the Association. The Association owns the Journal. The Journal does not own the A. M. A.—Yet—

6. The Journal of the A. M. A. controls all the funds and all the property of the Association as well as the funds that belong to the Journal of the A. M. A. The tail wags the dog.

7. The Treasurer of the A. M. A. is merely a figurehead. The Journal management uses the Association funds as it pleases, for business needs, and turns only the surplus over to the Treasurer, thereby vitiating the constitutional purpose in the creation of a Treasurer.

8. The Journal management dictates the ways in which the Association's money shall be spent.

9. The editor of the Journal of the A. M. A. is assuming the functions of "General Manager" of the American Medical Association, and, ex-officio, of every physician in the United States, although such despotic authority was never conferred upon the editor of the Journal, either by the House of Delegates or by the physicians themselves.

10. When the reorganization plan was adopted it provided for the first time for a House of Delegates and stated specifically that this should be the legislative and fiscal body of the Association, and that the funds of the Association should be appropriated by the House of Delegates. Today the Editor of the Journal of the A. M. A. and his board of Trustees have nullified the House of Delegates and have assumed the right to make appropriations for the entire Association.

11. The Secretary of the Association is merely a marionette in the hands of the Board of Trustees, and the editor of the Journal. (See p. 48 Off. min. 1910 session.) The Secretary has been deprived of any possible initiative by an amendment to the By-laws.

12. The editor of the Journal has assumed, entirely without warrant, that he is the "general manager of the Association," and not of the Journal only.

13. The Board of Trustees has assumed that it has the authority to appoint and control all officers of the Association as well as those of the Journal.

14. The Board of Trustees trys to camouflage the House of Delegates into believing that the Treasurer is elected by that body, whereas the House of Delegates is without choice in the matter. (Sec. 1, Chap. 4 of the By-laws says, "The Treasurer shall be nominated by the Board of Trustees.") Under no circumstances has the House of Delegates a chance to do a thing.

15. The House of Delegates is without voice in the appointment of committees. (Sec. 1, Chap. 5 of the By-laws states, "That the President shall nominate the standing committees.") The House of Delegates must confirm the nominations. Here again there is no choice, and so on, ad infinitum ad libitum.

16. The Board of Trustees began existence as a committee of supervision of the publication of the Journal. Today the Board of Trustees exercises the right to act upon and control all of the activities of the organization.

17. The President of the A. M. A. has been degraded into a mere automaton where control of the organization is concerned, with even this puerile power of "recommendation" for appointment further weakened by the power of veto,

assumed by the Board of Trustees, as evidenced by Sec. 1, Chap. 5 of the By-laws.

Incredible but true! And the worst of it all is, that of the medical profession affected so direly by this drastic situation, few of the members know what is the real condition of affairs, as it has been brought about with such rare adroitness.

In direct elucidation of the statements made here let it be understood plainly that:

The policy of the present management of the A. M. A. has been and is the accumulation of money for the erection of buildings and to make a big showing for the Journal. This feature has been worked overtime while the economic welfare of the individual physician and the profession at large have received minimum, if any, attention. Here is where the A. M. A. falls down with a vengeance. Instead of serving the individual doctors of the Association as a great labor organization stands up for its members, the A. M. A. does nothing to help physicians maintain their economic positions in society.

Since the reorganization it is apparent that the management of the A. M. A. prefers to take its advice from men out of touch with the daily needs of the profession. The struggling doctor is left to fight his own way unaided.

Since the House of Delegates of the A. M. A. is without voice in the election of the personnel of standing committees, there results a pitiable defect, that places the profession in bondage. Recall to mind how committees of the A. M. A., created supposedly to help formulate policies intended to safeguard the interests of the whole profession, have possessed a personnel largely made up of non-practicing physicians; or of men who had never practiced medicine; or of theorists; or of men who admit that they were failures in the practice of medicine; or of statemedicine advocates; or of health-center, Sheppard-Towner Maternity propagandists; or of Compulsory Health Insurance, hospital-at-every-crossroads (under University control and operation) advocates; or of state, county or city built and operated hospitals — which means politically controlled, in every township, disciples; or of men who preach that-your-child-belongs-to-the-state, propagandists, and so on ad nauseam.

The A. M. A. per se is hamstrung. Instead of being developed as a protective influence for the economic advancement and social welfare of the rank and file of the profession, the A. M. A is made to perform these services chiefly for the Journal.

As the Secretary of the Association is a mere figurehead controlled by the Editor and the Board of Trustees, there is no one at the headquarters of the A. M. A. to represent the members or to promote organization. The result is that for twelve years there has been no advance in *organization,* nor will there BE any such progress until the Secretary is freed from all control by the Editor and the Board of Trustees, is made responsible to the House of Delegates, alone, and is made financially independent by being paid a salary fixed by the House of Delegates and at least equal to that of the Editor.

Few of the members of the A. M. A. realize the centralizing changes that have taken place in their organization within the last 22 years. So adroitly and insidiously have these changes been brought about that the majority of members, even those best informed regarding the organization, have been so dazzled by the material prosperity of the A. M. A. that they have entirely overlooked the fact that, during this period of expansion, the Association has been converted from a democratic and self-governed body of professional men into a highly centralized machine with absolute control concentrated in a single individual. The majority of the attacks which have been made on the management of the association during this time, have been directed entirely at the editor of the Journal. These attacks have been futile and have been welcomed by the management for the reason that these criticisms have diverted attention from the gradual but steady absorption of all the authority and control of the organization. The methods by which this process has been carried on can best be appreciated by tracing, as we have done, the successive steps, through amendments to the Constitution and By-laws as these amendments have been made through the intervening years.

In 1898, the A. M. A. was an entirely different organization from what it is today. Dr. John M. Hamilton, then editor of the Journal, devoted a few hours each week to general supervision. Permanent Secretary Dr. Atkinson of Philadelphia, was supposed to keep the minutes and carry on the official correspondence. The only

business or financial interests that the Association had, were those belonging to the Journal. These were managed by a Board of Trustees, created in 1882 at the time the Journal was established, *solely for the purpose of superintending the publication of the Journal.* In fact, for the first 20 years of its existence, the Board of Trustees was known as the "Board of Trustees of the Journal of the A. M. A.", and its duties were limited entirely to supervising the publication of the Journal.

Dr. Hamilton's sudden death in 1898, together with the dissatisfaction that had existed for a long time, with Dr. Atkinson, as Secretary, led to the determination of the Board of Trustees to elect a whole-time editor who would devote himself to *developing the Journal.* In February of 1899, Dr. Simmons was elected editor of the Journal. At the annual meeting in June, it was suggested the editor of the Journal also act as Secretary of the Association. This suggestion was adopted and Dr. Simmons occupied the two offices, from that time until 1911.

By 1901 the Journal had developed to a point where reorganization seemed necessary. It is significant that the financial statement for this year was headed *"Report of the Trustees of the Journal of the A. M. A."* The year previous, 1900, a committee on reorganization had been appointed, which submitted its report at the St. Paul meeting. This reorganization plan for the first time provided for the delegate body to be known as the House of Delegates. It provided for the following officers: President, four Vice-Presidents, a Secretary, a Treasurer, and nine Trustees. It stated specifically, that the House of Delegates should be the legislative and fiscal body of the Association and that the funds of the Association should be appropriated by the House of Delegates. At present, the editor of the Journal and the Board of Trustees attend not only to appropriating the funds but also to most of the other functions of the House of Delegates.

The reorganization committee's report also provided that the Editor of the Journal should be the Secretary of the Association, and that the Board of Trustees should have authority, "to appoint an editor and such assistants as it deemed necessary." The only authority given the Board of Trustees was "To provide and superintend the publication and distribution of such proceedings, and transactions and memoirs of the Association as may be ordered (by the House of Delegates) in such manner as may be directed." The new By-laws further provided that, "All matters of the Association pertaining to the expenditure of other monies (that is, money for other purposes than the publication of the Journal), shall be referred to the Board of Trustees, who shall make a report of the same within twenty-four hours, and if the House of Delegates orders the expenditure of money, the payments shall be made by the Treasurer." *It will be seen from the above that the reorganization plan specifically gave the power of appropriating money to the House of Delegates; that the functions of the Board of Trustees were purely advisory and that the action of the House of Delegates in appropriating money was final.* Any claims, therefore, that the present method of controlling the finances of the A. M. A. were approved by the Association at the time of the reorganization in 1901, are entirely without foundation, as shown by the official records.

At that time, the only source of revenue of the Association was the Journal and the only purpose for which money was expended, with the exception of some slight Association expenses, were the expenses of publishing the Journal. It was, therefore, perfectly natural that all bills should be approved by the editor and all checks signed by him. It was perfectly natural, that as the only responsibility of the Board of Trustees was the publication of the Journal, the voting of appropriations should be left in their hands. It was early recognized by those desirous of concentrating the powers and resources of the Association that whoever *controlled the finances of the Association would ultimately control the Association itself,* since no action could be taken, no committee could function, no officers could carry on any activity, except as the necessary expenses for such purposes were authorized.

In the twenty-two years of expansion of the Association and the Journal, the *anomalous condition has developed whereby the Journal which is the property of the Association, now absolutely controls the Association to which it belongs. The editor of the Journal has developed into an absolute dictator of the Association and its affairs through his control of the finances of*

*the Association,* while the Board of Trustees of the Journal has been converted into a Board of Directors of the Association which now assumes to control all the activities of the Association, and even to dictate to the officers, Boards and Committees of the Association, as to what they can do, and how they can spend the money, which is the property of the Association. And in all this time, the question as to whether the members of the Association or their duly elected delegates were in favor of such a fundamental change in the organization and policies of the Association, has never once been squarely submitted to vote.

This conversion of the Association from a *democracy to an absolute autocracy has been brought about so slowly and shrewdly, so surely and so persistently that even the members of the House of Delegates themselves, have not been aware of this overthrow of self-government and the substitution of an oligarchy for a rule of the people.*

*These changes have resulted in converting the Board of Trustees from a supervising committee of the publication of the Journal into a Board of Directors of the Association which now claims the right to act on and control all the activities of the Association. Another instance of the tail wagging the dog.*

The individual members are today in the same position as stockholders in a corporation. They can vote for Directors but they have nothing to say about the policy or management. The editor of the Journal has developed into a general manager of the Association with absolute control over all the other officers of the organization, who have been subordinated gradually to him. *In his hands has been placed control of all of the funds of the Journal of which he is editor; also of all of the earnings of the Journal; and of all of the funds of the association itself and of all of the surplus funds of the association and of all other property that it may have.*

The Board of Trustees was formed originally as a publication committee for the Journal. For instance, in the official minutes of the Forty-third Annual meeting, held at Detroit, in 1892, over ten years after the establishment of the Journal, a resolution adopted by the Association refers to the *"Trustees of the Journal of the American Medical Association,"* and gives the Trustees very sharp instructions regarding the kinds of advertising they can accept. The report of the Board for the same year is headed "The Report of the Trustees of the Journal of the Association." In this report occurs the following statement, *which might well be considered by the present Board, "The Association owns the Journal, and not the Journal the Association."* In 1900, the year after the election of the present editor, the question of reorganization of the Association was brought up, and a committee appointed to draft the new constitution and by-laws. This committee reported at the St. Paul meeting in 1901, a meeting which has since been famous in the history of the Association as a reorganization meeting. This report reorganized completely the Association on a plan which is still being followed in the main. The committee on reorganization, that made the report, consisted of three men, Dr. J. M. McCormack of Kentucky, Dr. P. Maxwell Foshay of Chicago, and the Editor of the Journal. Dr. Foshay was recognized as a stop-gap member who was put on merely to complete the committee; the real work of drafting the constitution and by-laws was done by Dr. McCormack and the Editor of the Journal. It is significant that Dr. McCormack was interested in building up the organization as a source of benefit to the profession. Results would tend to engender the general belief that Dr. Simmons on the other hand was out to make the Journal dwarf the society it serves; that he feared the A. M. A. as an Association, and wanted himself and the Journal to overshadow the organization, and to have the organization subservient. Antagonism between the interests of the Journal on the one hand and the Association on the other began at this point, and continued until 1913 when Dr. McCormack, who had always stood for the ideal of upbuilding the A. M. A. into a tower of strength and protection for the individual members of the profession as well as for the traditional tenets and the interests of the organization, was forced out of official connection with the Association.

The new constitution provided for a House of Delegates of 150 members, made up of representatives from the State Associations, for a definite relationship between the County, the State and the National Organizations, and for the exclusive control of membership by the

County societies. These are the three objects which have been repeatedly set forth as the purpose of reorganization.

There is in the Constitution and By-laws of 1901 no mention of a "General Manager." The editor of the Journal is referred to throughout by his proper title. The Board of Trustees is given authority only, "to provide and superintend the publication and distribution of all such proceedings, transactions and memoirs, of the Association as may be ordered, to *be published, in such manner as may be directed.*" It is also authorized to appoint an editor and such assistants as it deems necessary for the publication of the Journal. *The House of Delegates is specifically recognized, not only as the legislative, but also as the fiscal body of the Association.* The President is made the presiding officer of the General sessions of the House of Delegates and given the right to vote in case of a tie, as well as the power of appointing all committees.

No further changes of any importance were undertaken until 1904, when a revised constitution and by-laws, drafted by the same committee, was reported and referred to the Committee on Constitution and By-laws and adopted (Journal A. M. A., June 11, 1904, page 1581).

The next session of interest is that of 1907 at Atlantic City at which a concentrated attack was made on the administration. In the debate on the adoption of the report of the Board of Trustees, was used for the first time the title "General Manager" in referring to the editor of the Journal. At the same meeting, an effort was made to seat a Trustee as a voting member of the House of Delegates, whereupon the Reference Committee on Amendments to the Constitution and By-laws reported an amendment specifically making the members of the Board of Trustees ineligible to sit in the House of Delegates—one of the few instances in which the machine failed to slip something over which was apparently unimportant but really dangerous.

In 1910 the constitution and by-laws were again subjected to a general revision; evidently it was considered easier to secure the adoption of a large number of changes than of a single amendment. In the new draft, the duties of the President were restricted to those of presiding officer. The section regarding the secretary contained this significant addition to the enumeration of his duties: "He shall perform such other duties as may be directed by the House of Delegates or the Board of Trustees." *This was the first step in making the Secretary of the Association subordinate to the Board* (Page 48, Official Min., 1910 session). The significance of this is readily seen when it is remembered that at the next session (1911) the editor submitted his resignation as Secretary and Dr. A. R. Craig was elected to fill the vacancy. Before allowing this important post to pass, even into the most compliant hands, it was considered necessary to modify the by-laws *so as to deprive the Secretary of any possible initiative.* The fact that the chairman of the Reference Committee which made this report in 1910 was elected Secretary of the Association in 1911 was hardly accidental. The report provided also that the Board of Trustees should have charge of all property and financial affairs of the association; it should "appoint a General Manager and an Editor of the Journal with such assistants as may be necessary, and shall determine their salaries and the terms and conditions of their employment." The language used could only mean that the person or persons appointed were to be a General Manager of the Journal only and an Editor of the Journal; and that the Assistants which the Board of Trustees were to control, were to be assistants on the staff of the Journal. In spite of this plain and obvious interpretation, the Board has assumed throughout that it had the authority *to control all officers of the association, as well as those of the Journal, and the General Manager of the Journal has assumed, entirely without warrant, that he is the General Manager of the Association as well as of the Journal. There is no warrant for such an assumption, even in the By-laws as they stand today.* Had it been the intention of the House of Delegates to create a General Manager of all of the affairs of the Association, the by-laws would have read, "they (the Board of Trustees) shall appoint a General Manager of the Association, and an Editor of the Journal."

The records show no such action and it is beyond reason to suppose that the House of Delegates intended to authorize the Board of Trustees that it had created to appoint an autocrat who should have control of all of the affairs of the Association. For, if this were true, it would be making the creature of the creature greater than the creator.

The next year, 1911, at Los Angeles, another

joker appeared. The year before the Secretary of the Association had been put under the control of the Board of Trustees. At Los Angeles, this section was amended to read, "He (The Secretary) shall perform such other duties as may be directed by the House of Delegates, the Board of Trustees, *or the General Manager.*" *The object of such amendment is obvious.* Its effect was to make the *Secretary,* who is presumably an *executive officer of the Association,* subordinate to and under the orders of the *Editor of the Journal, who is not the General Manager by any authorization of the House of Delegates.* This amendment was adopted by the House (page 40 Off. min. 1911, Los Angeles Session).

Having made the editor of the Journal (elected by the Board of Trustees) General Manager of the Association, and having made the Secretary (elected by the House of Delegates) an office boy for the editor of the Journal, it remained only to make the Board of Trustees a Board of Directors *of the entire Association, with the complete control of all of the Association's activities.* As a step in this direction, *the President was deprived of practically all of his authority,* by providing for a Speaker of the House who appoints all reference committees and controls the actions of the House of Delegates, leaving to the President no duties except to preside at the single general meeting and to recommend certain persons for appointment on standing committees. Even then the Board of Trustees can exercise the power of veto.

In 1920 it was found that the constitution and by-laws again needed extensive revision. Revising the constitution appears to have become a habit. So drafting of the new constitution and by-laws was naturally entrusted to the Judicial Council. Their report was presented at the 1920 session and was referred to a reference committee which reported that it found that "no radical changes had been made" but that "the constitution and by-laws had merely been brought up-to-date." They had been! We'll tell the world! The provision regarding the Board of Trustees now reads, "The Board of Trustees shall have charge of the property, and financial affairs of the Association *and shall perform such duties as are prescribed by law governing directors of corporations.*" (Off. min. 1920 ses.; page 31). The reference committee said that the constitution and by-laws had been "simplified." Simplified is right! By this simplification, the medical profession has been dehorned and government by the members has become a mirage.

Ponder over this epitome of the back fire of the so-called "simplification" that has resulted in unauthorized, illegal autocracy and usurpation of constitutional rights of the rank and file of the profession. The results include the board of trustees, *originally a publishing committee, for the Journal,* now transmuted into a *board of directors* assuming all the authority that corporation laws give to such a body; the editor of the Journal assuming duties of a general manager of the A. M. A., with absolute control over all the activities and finances of the organization: the secretary, originally the executive officer of the organization, *demoted into a minor official, compelled to take his orders from the board of trustees and the editor of the Journal,* his salary fixed by the board of trustees, *which, of course, means that the secretary is subject to the will of the editor,* while all the other officers, employees and committees of the organization are under the complete control of the Board of Trustees, which, without exception, adopts the recommendations of the editor.

What has come about, then, since 1901, is that the County Medical Societies have delegated their authority to the State House of Delegates; the State Association, through its State House of Delegates, has delegated all its authority to the house of delegates of the A. M. A.; the house of delegates of the A. M. A. has delegated all its authority to the board of trustees, which is now the board of directors, and the Board of Directors practically has delegated its authority to the Editor of the Journal, who as an unauthorized and self-constituted general manager of the Association controls all of the activities, finances and functions of the organized medical profession. A pyramid, with one man sitting on the top.

An autocracy in medicine is as undesirable as an autocracy in the national government. Without a doubt, the members of the A. M. A., have a right, if they so desire and if the question is presented to them, so that they can vote on it intelligently, to delegate complete control of their professional activities to one man. But such action never has been taken consciously *nor*

*would it ever have been allowed to be effected had the real purpose of the various and apparently insignificant amendments to the by-laws been understood. But so gradually, imperceptibly and craftily has this change taken place, that few members even of the House of Delegates realize that no matter what* may be the recommendations of any of the councils or committees; no matter what may be the decisions of the House of Delegates, no matter what may be the actions or the appropriations of the Board of Trustees itself; no committee, Board or Officers of the A. M. A. today can spend five cents of the Association's money without the approval and consent of the Editor of the Journal. For it was recognized *long ago that whoever controls the finances of the Association, will control the Association.* So we have, today, *the anomalous and absurd situation that the Journal, which is the property of the Association, not only spends what money is necessary for its own expenses, but that the surplus earned by the Journal each year, which does not belong to the Journal itself, but to the Association, as well as all of the funds of the Association itself, are controlled by the Journal;* so that this money can not be used for any purpose whatever unless it is in *line with the policies and plans of the editor.* No matter what individuals may be selected to fill any vacancies that may occur, or who may be elected president of the Association, or members of the Board of Trustees, this situation will continue so long as the Board of Trustees dictates and controls the action of the Association; so long as the Editor has complete control of the finances of the Association, and so long as the Secretary, elected by the House of Delegates as the Executive officer of the Association, is compelled to take orders from the Board of Trustees, and the Editor and is financially dependent on them.

Measured from a penny-wise standpoint, that the Association has prospered is conceded, but what relation does this temporary financial success bear towards medical ideals, and the betterment of professional conditions?

In the latter respect, failure is complete. That the A. M. A. has done little or nothing for the rank and file of the profession is murmured everywhere and not without justification. Instances galore could be cited, but what greater accusing finger can be pointed than the absolute apathy of the officials of the A. M. A. towards the Sheppard-Towner Maternity Bill and analagous economic questions?

The A. M. A. is not a business enterprise. Its success is not to be gauged in dollar bills or buildings, but in what it does to benefit its members and to retain the confidence and merit the support of physicians. In other words, "What does it profit a man if he gain the whole world and lose his own soul?" What does it profit the A. M. A. to accumulate land, bonds and mortgages with which to erect a whited sepulchre for the genuine interests of the profession it was organized to safeguard?

## THERE MAY BE A REACTION

In the zealousness of the faddists to put over health menacing legislation, they may accomplish something that was not intended, something that will prove of immense benefit to American citizenship. They may succeed in awakening an apathetic public to the necessity of that eternal vigilance which is the price of liberty. The encroachment of privilege on individual rights has made alarming headway of late years, and it may need only the shock of such mal-administration of government to arouse the people to what will surely happen if such encroachment is not ended, and a return made at once to the fundamental principles of the great American democracy.

BAYARD HOLMES.

## DOCTORS WANTED

*Wanted for the Illinois State Hospital Medical Service*: Physicians (men preferred) under forty years of age, graduates of class A schools. Salary $150.00 per month with maintenance for self and family. The work is that of caring for the insane in the various state hospitals. Address Dr. Charles F. Read, State Alienist, Dunning Station, Chicago, Illinois.

## NOTICE

McDonough & Company, 416 So. Dearborn street, Chicago, publishers of the Illinois Medical Blue Book, are now forwarding letters enclosing data blanks to all physicians and surgeons in the state, requesting their data for the 1923 edition which will be published at an early date.

The publishers have set a high standard for themselves in regard to the information fur-

nished. They are making every effort to render the Third Annual Edition (1923) of the state Blue Book of even greater use as a book of reference, a directory to which both the medical profession and the general public can look for absolutely reliable data.

It is no small matter to compile a directory of this nature, and its editors earnestly request that each and every doctor who receives the blank will fill it out and return it at once. The immediate return of this data will greatly facilitate the early issuance of the Blue Book.

## NOTICE

A cordial invitation is extended to the members of the Eye, Ear, Nose and Throat section of the Illinois State Medical Society to present papers at the next meeting, which will be held at Decatur, Illinois, May 15, 16, 17, 1923.

All members desiring to appear on the program are requested to send the title of their paper to the Secretary, Dr. Wm. L. Noble· Room 1010, Columbus Memorial Bldg., 31 N. State St., Chicago, Ill., as promptly as possible.

## IS MEDICINE TO BE A NEW AUTOCRACY?

Much has appeared recently in the lay press pertaining to the practice of medicine. Two articles by R. de St. Denis in *America* have recently appeared and because of the wide circulation of this journal, it will be read by thousands and thousands of people. In the first article, the author described the widespread movement towards prolonged medical training and the reasons alleged in its favor. In the second installment which appeared October 28, he pointed out the dangers to the public and the profession in the creation of a medical autocracy, should this movement be unduly promoted.

The following is the article:

### MEDICINE, A NEW AUTOCRACY?

In the preceding article I described the wide-spread movement towards prolonged medical training and the reasons alleged in its favor. In the present I shall point out the danger to the public and the profession in the creation of a medical autocracy should this movement be unduly promoted.

It is a question if a fourth year, or even a third year of obligatory premedical training is justifiable. Of course, it is desirable that only the finest type of men, men of wide sympathies, of high ethical ideals, enter the profession, and selection should therefore be severe. Yet even the present training of six or seven years offers certain objections that would be emphasized if the period were extended still further. Briefly, these objections are as follows:

1. The long training period tends to establish a money aristocracy. Only the student with considerable means or considerable earning capacity can hope to furnish the funds required. The moneyed student is thus favored, while the student lacking the funds, or the opportunity to earn them, is very seriously handicapped. The longer the training period, the greater this handicap. Parenthetically, the moneyed student usually evinces the very human tendency of "showing off" his money, making the poorer student envious, and perhaps making him believe that the primal aim of the medical profession is the accumulation of money, and not the alleviation of pain and the healing of wounds.

2. The long program stresses purely the intellectual attainments and ignores the moral and ethical phases. Yet it is known that a man may be mentally an intellectual giant, but morally a blackguard; mentally an encyclopedia of facts, yet an utter failure in the practice of his profession. It is desirable that more attention be given to the character of the student. The present criterion of ethical standards reads "high grade."

3. The training period is unduly prolonged, and the mortality terrific. The percentage of "flunked" or merely "dropped" students in the first and second medical year is large, but smaller for the third and fourth years. Yet even in a "six year curriculum" it means that the dropped student has the equivalent of an average university education behind him. Unfortunately, this education is not of a sufficiently generalized type to permit him to enter some other profession, say law, teaching, engineering, etc. On the contrary, even the premedical work is distinctly of a specialized nature, the course having been selected purely with the idea of fitting the student to take up the advanced phases in the medical school proper. The premedical courses are prescribed as so many credits of chemistry, so many of zoology, physics, English, languages, etc. In view of this the student is required to specialize from the very beginning. If he is dropped in the third or fourth year of his work, the result is calamitous. Such a student must practically begin where the ordinary freshman begins.

4. Even for the survivors the trials are not ended. Suppose the training is at least completed, and the young physician opens up an office. He enters his practice at an age when most men have been established for some years. And before him he has several difficult and expensive years till he knows if he will succeed or fail.

5. To repay the investment in time and money, fees must be raised to an extent where only the wealthy can afford medical advice. The physician has every right to realize on his investment; but if he must raise his fees because his investment was so very large, the purpose of the profession is lost. Right now, in country places, the fees for "out of town" calls are exceed-

ingly high; country people therefore call the physician only *in extremis*, too frequently when the case is well advanced, or perhaps entirely too late. In such circumstances the development of the most promising field of medicine, namely preventive medicine, is hindered.

6. In his practice the moneyed physician feels little incentive to exert himself in the service of his fellowman. On the contrary, the man with humble beginnings brings to his work "the urge to make good;" by virtue of his simple early association he brings with him a more sympathetic understanding of the struggles and trials of the poor, or at least less moneyed folk. He has been trained in bitter realities not in the misleading comforts of a wealthy life.

7. Finally, it is a deplorable fact that the medical profession constitutes the most conceited class of men in the world. This conceit is in proportion to the length of training the individual has undergone. Very many causes have contributed and continue to contribute to this arrogance. First, there is the length of training and the expense it entails. Secondly, the training is so variegated, it touches such a tremendous variety of topics, taking the cream from each, that the student finally gains the idea that he has exhausted the field of knowledge. Besides this, consider the fact that he is, so to speak, to be "the master of life and death." And finally he is constantly called upon for opinions and advice on the multitude of topics which really require an encyclopedic knowledge. To be sure, he is a superior person, the elite of the civic body. He knows that too well. For has he not survived six to eight years of the most intensive training? It seems unnecessary to increase this megalomania by making the disparity between this training and that for other professions still more pronounced.

The propect of prolonged training with its accompanying expenditures discourages many of the most promising students. I am personally acquainted with an indefinite number, of whom many were admirable types, students of fine character and mentality, students whom I tried to encourage to continue despite obstacles. In nine cases out of ten, money is the factor that makes students change, money and the prospect of long deferred returns. The tenth case is the student of average mentality, good character, who fears to lose out in the struggle for place because he realizes that he is only an average student. A prolongation of the course of studies means that every one of the objectionable conditions listed will be aggravated to an extent where all but the moneyed student will be barred.

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"Yes," said the dentist, "to insure painless extraction, you'll have to take gas, and that's fifty cents extra."

"Oh!" said Casey, "I guess the old way'll be best; never mind the gas."

"You're a brave man," said the dentist.

"Oh!" said Casey, "it ain't me that's got the bad tooth; it's my wife."—*New York Central Magazine.*

## LEGAL STATUS OF PHYSICIANS AND SECTARIANS*

FREDERICK R. GREEN, M.D.
CHICAGO

Probably no subject has given rise to so much acrimonious discussion and bitterness of feeling as the efforts of physicians to restrict the practice of medicine to certain individuals or to certain classes. This problem is apparently no nearer permanent solution than it was fifty years ago. The proceedings of our state associations show that every year the adoption of a new medical practice act or of an amendment to the existing medical practice act is among the subjects discussed. At every session of the state legislature, bills creating new practice acts or amending existing laws, and special bills providing for the registration of osteopaths, chiropractors, naturopaths, drugless healers, mental healers and other fantastic sects occupy a considerable share of the session. There is no other subject on which the medical profession in the last thirty years has expended an equal amount of time and energy. Yet, in spite of all our efforts, there is not a single sect or cult, no matter how absurd or fantastic, which has failed ultimately to secure the so-called legal recognition which it sought, in spite of any objection which the organized medical profession might present. Two explanations are usually given for the failure on the part of physicians to prevent the passage of such measures. These are lack of understanding on the part of the public, and indifference and lethargy on the part of the medical profession.

In spite of all our efforts, this question today occupies as large an amount of time and absorbs as much energy as it did twenty-five years ago. That it has not as yet been satisfactorily solved is generally admitted. That its discussion is hampered by our own prejudice is also true. Rarely, if ever, is this question discussed in professional circles with the thoroughness, the absence of personal feeling and the readiness to accept a recognized truth from any source which characterizes our discussions of the scientific questions of medicine. This is largely because, whatever may be our lack of prejudice on other questions, on this subject we are ourselves sectarians and partisans. Yet its practical importance cannot be denied. It is not a scientific question, but an administrative and social question of importance, not only to physicians, but also to the public. Is it not, therefore, worth while for us to consider it, not in the light of our personal and professional prejudice, but rather as an abstract problem, a permanent solution of which would render unnecessary any further waste of time in the needless and profitless efforts of the past?

*Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Third Annual Session of the American Medical Association, St. Louis, May, 1922.

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Is it not possible that both the indifference of the public and the lethargy of the profession may be entirely justified, that the conventionally accepted attitude of the medical profession on this subject for the last forty years may be based on erroneous premises and inaccurate reasoning, and that, instead of endeavoring to educate the public to our point of view, we might rather attempt to learn something from the public point of view?

### LEGAL REGULATION

The history of the efforts to restrict the treatment of the sick to certain individuals goes far back into the past. In a primitive civilization or in a simply orgnized state of society, no restrictions on professions or occupations are necessary. Each individual does what he is able to do for his own benefit or for the benefit of others, without any hindrance. It is only when society has become relatively complex that regulations for the government of various trades, industries, occupations and professions became necessary. There is, consequently, nothing inherently wrong in any individual pursuing any occupation or profession which he may see fit. As society increases in complexity, regulation of many human activities becomes necessary. The violation of such regulations does not constitute inherent crime, as does murder, stealing or various other acts which are in themselves criminal.

The regulation of professions, occupations and trades, legally speaking, comes under what is known as the police power of the state, characteristics of which are that it aims directly to secure and promote public welfare, and that it does so by restraint and compulsion. Under the police power of the state comes a vast multitude of subjects which increase as society becomes more complex. Everything having to do with licenses, reports, registration, prohibition, commerce, safety, public health, public order and comfort, public morals, the regulation of capital, public corporations and property comes under the police power of the state. The only object and the only justification for the exercise of police power is the greatest good to the greatest number, or, more concisely, the general good. Acts which are regulated by police power are, in the majority of cases, acts which in themselves are not culpable and which are wrong only in a statutory sense; that is, because it has been found best for the public good to provide certain regulations for such acts.

Legally speaking, the regulation of the practice of medicine comes under the same classification as the regulation of any other occupation, profession or trade or of any other subject which must be regulated or restricted for the public good. Regardless of the provisions or limitations which may be made, the practice of medicine without a license is never a crime, but only a misdemeanor. It is in the same class as running an automobile or keeping a dog without a license, exceeding the speed limit, permitting a factory chimney to smoke, or violating any other of the thousand and one restrictions and regulations which modern society has evolved for its own protection.

Without attempting to discuss the history of medical practice acts in this or other countries, all of which I have considered at length in a previous article, it is interesting to note that the present system originated with Dr. N. S. Davis in the early seventies. In the hope of elevating the standard of medical education, Dr. Davis urged the creation of boards of examiners to pass on the qualifications of applicants, entirely separate from the medical faculty which had given the instruction to the student. In other words, as Dr. Davis put it, there should be a complete separation between the educating and the licensing bodies. His demands, which can be found in the proceedings of the American Medical Association from 1867 to 1873, were for the creation of a board of examiners by the state for the examining and licensing of medical college graduates. As a result of his agitation, Texas in 1873, Kentucky and New York in 1874, New Hampshire in 1875, and California and Vermont in 1876, passed laws creating such boards. During the next twenty years, every other state passed some kind of a law on this subject, so that by 1895 there was in practically every state a board created by special enactment charged with the duty of examining and licensing physicians and surgeons.

While differing considerably in details, practically all of these laws are based on the same principles and have the same general characteristics. They have been enacted almost entirely through the influence and at the demand of the regular medical profession. To discuss the numerous laws which have been enacted in the last forty-nine years is impossible. In no state is the original practice act still in force. In each state there has been a succession of laws and amendments enacted making changes from time to time. In the forty-eight states more than 250 separate laws on this subject have been adopted during this period. In 1907, I abstracted and published in the American Medical Association Bulletin all of the medical practice acts then in force, and endeavored to summarize the average law on the subject. The synopsis, which I designated as a composite picture of medical legislation at that time, is equally applicable today, as the general character of these laws has changed but little during the last fifteen years.

No sooner were these medical practice laws enacted than there arose many cases which had to be settled by the courts. These involved prosecution of individuals accused of practicing medicine without a license, efforts by the board to revoke licenses once granted or demands, on the part of persons denied licenses, for a review of their cases by the courts, and the securing of what they considered to be their rights. It is significant that in the ninety years from 1780 to 1870, there had been only twenty-eight decisions in this field in all states, while, in the fifty-two years since

1870, there have been more than 800 cases passed on by supreme courts. In the early seventies, the suits involved mainly the rights of homeopaths and eclectics to practice medicine and to be represented on the examining boards. The appearance of the osteopaths in the late eighties caused a large amount of litigation and the rendering of many decisions, just as did the advent of the chiropractors later on. Each new sect as it appeared aroused opposition, prosecution and appeals to the higher courts, with the final rendering of decisions which established the legal status of the sect or cult, whatever it might be.

### COURT DECISIONS

To discuss these eight hundred supreme court decisions in detail is impossible. In 1915, the Council on Health and Public Instruction published a digest of supreme court decisions on the state regulation of the practice of medicine, up to that date. In this digest these decisions were abstracted, indexed, analyzed and summarized. The decisions which have been rendered since that time are in the main simply confirmatory of the previous decisions, and do not in any sense alter the principles laid down.

The final decisions of the courts of last resort are recognized as final authority on any legal question. What are the conclusions which can be drawn from the opinions of the various supreme courts on this subject?

They hold that the sole justification for the enactment of medical practice acts is the protection of the public from incompetent and unscrupulous persons; that the state has a right to enact laws making any reasonable standards for the practice of medicine; that the object of such laws is not the benefit of the physician, but the protection of the public; that it is not the function of the state, through either its legislature or its courts, to decide scientific questions or to determine the scientific value of one school or method of practice as compared with another, or to decide the relative value of different forms of treatment; that the sole interest of the state in the practice of medicine is the regulation of medicine as a business; that the legislature is justified, for the public good, in establishing and enforcing reasonable regulations under which such business may be carried on; that the qualifications and conditions exacted must be reasonable and equitable and must be the same for all those who desire the same privileges, and that the function of examining boards is to test the qualifications and knowledge of applicants in order to determine whether they may be properly entrusted with the treatment of the sick.

### MEDICAL PRACTICE ACTS

The accumulated experience of the medical profession on this question in the different states for the last fifty years, and the history of the various experiments that have been tried, and of the attitude of the public, the courts and the legislatures, forms an interesting chapter in the history of applied medicine. To discuss them in detail, under present limitations, is impossible. Summing up the situation, we find that after years of effort and experiment, the essential problem is no nearer solution than it was in the beginning.

Each state has on its statute books a medical practice act, which has been secured at great expense of time and labor on the part of physicians. It is in constant need of defense; it is not effective in acomplishing the purpose for which it was enacted; it is not understood or supported by the public for whose protection it was passed; it is of no special value to physicians because it handicaps the honest practitioner, but does not deter the faker or the charlatan, and it does not prevent any new sect, which may arise, from overriding its provisions. The public, feeling that such laws are for the benefit of physicians, is not and never has been especially interested in their enforcement.

By our insistence on the passage of these laws and through keeping their administration in our own hands, we have strengthened and confirmed this public misconception. As a result, we now have a cumbersome and ineffective machinery, supported largely at the expense of physicians, which has to be defended continually against assault, which ocupies a large part of our time and energy, which might better be devoted to better purposes, keeps us in a false position before the public and arouses and keeps alive antagonism against the medical profession. The present laws do not accomplish the purpose for which they were created, and the efforts to adopt and administer them have in many states dragged the medical profession into politics and have prostituted our scientific organizations without any conpensatory benefit to us or to the public.

Is it necessary to pursue this indictment further? Let us look at the question from an outside point of view and apply it to some other class. Suppose that the owners of automobiles should appear each year before legislatures, asking for the passage of laws restricting the use of automobiles to certain individuals; that they should insist that the membership of all boards and the appointment of all administrative officers in carrying out these regulations should be controlled by automobile owners, and that only those persons who owned a certain kind of automobile should be permitted to have a license. Can you imagine the shout of derision that would go up from the people of the state at such a request? Yet this proposition is identical with the method now existing for the regulation of the practice of medicine.

### LICENSES

It seems impossible to disabuse the minds of physicians, who have grown up under the present licensing system, of the idea that a license is an official endorsement by the state of a system of treatment. Evidently, the followers of the various sects have the same idea, since they present bills before legislatures asking for special boards of ex-

aminers and special standards of education and qualifications on the plea that they want recognition from the state—as though the legislature were a jury qualified to pass on scientific questions, and the passage of a bill creating a board of examiners for one sect or another amounted to a certificate of merit or an endorsement of the methods followed. Such a conception shows a complete misunderstanding of the legal character of medical practice acts. A license to practice medicine is not a recognition of anything. It is simply a permit to do something. Legally, it is exactly in the same class as a license to run an automobile or to own a dog. No one would claim that an automobile license constituted a recognition of an Overland, a Pierce-Arrow or a Ford as being any better than any other machine on the market. Certainly no intelligent person would claim that a dog license was an endorsement or a recognition of an Airedale, a Boston bull or a collie. They are all of them simply permits by the state to do something which the state has restricted for the public good. A license to treat the sick is simply a permit from the state to carry on a certain business which has been by statute restricted to those holding such licenses. The license is evidence of the fact that they have complied with certain restrictions which the state, for the public good, has seen fit to require.

It is, of course, obvious that if there were only a single school of medicine and a single class of practitioners, there would be no difficulty regarding licenses. The problem of sectarianism is, therefore, inseparably involved in the discussion of the regulation of the practice of medicine. It is characteristic of each generation of physicians to regard the sects and cults of their own day as the only ones that have ever existed. To the physician of today, especially the man under middle age, homeopathy and eclecticism are simply names. Osteopathy is something that has existed throughout his entire professional activity. Chiropractic, as the newest, the most absurd of the many sects in medicine, is the only one which arouses the antagonism of the present generation of physicians. Yet history shows that sects of various kinds have been a constant accompaniment of the medical profession.

### CHARACTERISTICS OF SECTS

When the characteristics of all the sects in medical history are tabulated, it will be seen that they follow a surprisingly uniform course. Practically every medical sect, like every religious sect, arises through the peculiar teachings of some individual, who bases a new and strange system of healing on his own fantastic ideas, rather than on the accumulated knowledge, experience and wisdom of the human race. Without going back of the last hundred years, it is only necessary to mention Samuel Hahnemann as the founder of homeopathy, William Thompson in eclecticism, Mrs. Eddy as the high priestess of Christian science, Andrew Still as the originator of osteopathy, and Palmer, the magnetic healer of Davenport, Iowa, who invented chiropractic.

A second characteristic of sectarianism is that each cult starts with a small group of enthusiastic followers, personal disciples of the leader, who throw themselves into the propaganda with all the enthusiasm of religious fanatics. The parallelism between medical and religious sectarianism is indeed very marked. This group of followers grows first through personal contact and later through various methods of promotion.

The third peculiarity is that each sect evolves some new and fantastic theory regarding the cause of disease. Samuel Hahnemann taught that all disease was caused by the itch; Mrs. Eddy found the explanation for all mortal ills in mortal mind; Still taught that the human body was a machine and that all afflictions were due to the dislocation of some part; Palmer went Still one better and taught that all abnormal conditions of the body were due to the dislocation of one of the spinal vertebrae. It is worthy of note in this connection that all of these sects personify disease and regard it as an entity, rather than as any one of a great variety of abnormal conditions; that they all seek to attribute disease to a single cause, and to remove it by applying a single method of treatment.

A fourth peculiarity, common to all medical sects, is that they have a regular order of development and decay. Starting originally with the leader, who is regarded as inspired, the first generation of followers accepts the new method of treatment as a solution of all human ills. Later on, they recognize the limitations of their method and learn by practical experience that there are many conditions to which their methods are not applicable. As time goes on, their teachings are modified by force of circumstances and by contact with the practical world. They gradually drop their fantastic notions; recognize the limitations of their methods; profit by the general knowledge of the medical profession and, in time, lose their distinctive characteristics and merge themselves in the great mass of physicians. This has happened in our own day with the homeopaths and the eclectics. Osteopathic schools are now offering courses in minor surgery, obstetrics and, in some cases, general surgery. In ten or fifteen years from now, it is safe to say that such osteopathic schools as still exist will be giving the best courses they can offer on diagnosis and treatment and, in the next twenty-five years, osteopathy will have become a name without any meaning—just as homeopathy and eclecticism have today.

This, again, is in line with religious sectarianism, which, like medical sectarianism, originates in an individual, is promoted by his immediate disciples, starts out to conquer the world, and eventually settles dow.. into one of the innumerable sects of Christendom. Ask the average Presbyterian who John Calvin was and what the seven points of his theology were, and he couldn't tell you, to save

his soul from perdition, even if he knows he is one of the elect. How many Episcopalians know why their church separated from the Church of Rome? How many Methodists can tell you anything definite about John and Charles Wesley, or how many Baptists know why they believe in immersion rather than sprinkling? Twenty-five years from now the Christian Science church will be indistinguishable from other orthodox churches. Mrs. Eddy, before her death, recognized the limitations of her own teachings, and advised her followers to consult surgeons in cases of broken bones. The mother church at Boston long since instructed its healers to comply with state and municipal regulations regarding infectious diseases. Christian Scientists go to dentists for defective teeth and to oculists for errors of refraction. To expect the followers of either religious or medical sects to be consistent or logical is to expect the impossible. If these people had consistent or logical minds, they would not be sectarians.

### THE QUESTION OF PATERNALISM

One of the principal reasons for antagonism to medical practice acts has been the opposition of the followers of these various cults and sects, who felt that their liberty was being interfered with by the enactment and enforcement of medical practice acts. This has given rise to various local movements and, at the time of the agitation for the passage of the Owen Bill in Congress—from 1910 to 1914—gave rise to a national movement known as the National League for Medical Freedom. As is usually the case in sectarian controversies, both the knowledge and the methods of these agitators were open to criticism. At the same time, it cannot be denied that there is a certain amount of justice in their position. Huxley, many years ago, when the British medical practice act was under consideration, stated clearly that it was not desirable for the state to attempt to substitute restrictive legislation for individual judgment on questions relating solely to individual rights, and that it was better, in the long run, for each person to be responsible for his own well-being and to be free from any paternalistic supervision by the state. The courts have recognized in all their decisions that there are three classes who are entitled to special protection. These are, first, the child who is below the age of intelligent judgment and is, in the eyes of the law, an infant and a ward of the state, and as such is entitled to protection. This principle was emphasized by the supreme court of New Jersey in the celebrated case in which the parent, who was a Christian Scientist, was brought before the court for permitting his child to die from diphtheria on account of the parent's disbelief in antitoxin. The court, while recognizing the right of the parent to his own belief, denied the right of the parent to sacrifice the child, whose life might have been saved by recognized scientific methods.

The second class entitled to special protection consists of those who, through lack of mental development or through mental affliction, are incapable of exercising sound judgment. The insane and the feeble-minded, like the child, are wards of the state and are, as the courts have repeatedly held, entitled to the best care available scientific knowledge can give them.

The third class subject to special consideration, not on its own account, but for the public good, consists of those persons suffering from communicable diseases which may be a source of infection to others. Here the public good demands that they be given such care and treatment as will render them harmless to the community, and this can, if necessary, be carried even to the restriction of their liberty.

But, with the exception of the child, the insane person and the person suffering from a disease dangerous to others, any sane adult who has a bodily affliction which is not a danger to others has a right to control his own body and to take such treatment or refuse such treatment as he may see fit. If he wishes to consult an osteopath, a chiropractor, a Christian Scientist, a voodoo doctor, a witch doctor or a pow-wow doctor; if he wishes to treat his rheumatism by carrying a horse-chestnut or a potato in his pocket; if he prefers incantations to scientific treatment; if he likes prayers better than powders, or if he wants charms rather than surgery, he has a perfect right to do as he sees fit, and the state has no right to compel him to submit his body to any treatment that he does not desire. If he errs through ignorance, he must suffer the effects of his own poor judgment, just as he would in any other activity in life. Physicians must recognize this right on the part of the layman, just as they assert their own right to individual judgment on other questions.

### BASIS OF INTELLIGENT AND EQUITABLE REGULATION

Does this mean, then, that there should be no regulation of physicians or sectarians? By no means. Undoubtedly, there should be intelligent and equitable regulation by the state for the public good. What, then, is the remedy for the present absurd and unsatisfactory situation? It is for the medical profession to surrender to the public a function and a responsibility which it never should have assumed. If the people, for their own protection, desire to impose certain restrictions on those who wish to treat the sick as a profession for compensation, then it is the business of the public to determine the conditions and administer the machinery by which such regulations shall be carried out. Whether an individual is qualified to treat the sick is an educational and not a sectarian question. Its enforcement should be in the hands, not of physicians, but of the educational authorities of the state.

Having complied with the requirements of the state, which should be as high as they can be made, consistent with the public welfare, and having received a license, each person so licensed should be at liberty to follow any method of treatment or

school of practice which he may see fit, subject only to the common law limitations on professional responsibility. Any physician who undertakes to treat the sick is subject, under the common law, to definite liabilities for the character of his treatment and of his services. But there should be one standard for all, and the task of defending such laws and elevating the standard belongs to the public and not to physicians. If the rights of physicians are invaded, then we can go before legislative bodies and frankly and openly fight for our own interests. If the requirements are unfair or unreasonable in any way, then physicians can, with perfect consistency and with a clear conscience, appear before legislative committees and insist that reasonable provisions be adopted. But the protection of the public belongs to the pubilc itself, and it can be safe in no other hands.

It is difficult to understand when or how the fiction arose that the medical profession is a divinely authorized and chosen class, charged with the protection of the public health and public welfare, even against the desires and the wishes of the people themselves. Such a doctrine savors far too much of imperialism to be particularly popular at the present day. Abraham Lincoln was emphatically right when he said he did not believe any man was good enough to govern any other man against his will. I do not believe that any man or any class of men is good enough or wise enough to be charged with the responsibility of protecting the people without their consent. We have in the last fifty years been assuming a burden which did not belong to us. To this extent we have pauperized the people by depriving them of their own responsibility. The sooner this responsibility is returned to the people, where it belongs, the better it will be for the public and the medical profession.

Recognition of these principles has been slowly growing in the last fifteen years. In New York, the regulation of all occupations, professions and trades is under the jurisdiction of the board of regents of the state university. In 1911, Tennessee provided for a board of three educators as a board of preliminary examiners. But there was no general recognition of the duty of the state to regulate professions and trades through a definite department of the state government until 1916, when Illinois adopted what is known as the Illinois Code, creating as one of nine departments of the state government a department of registration and education with an educator at the head, which was authorized to examine and license physicians, surgeons, dentists, pharmacists, nurses, embalmers, optometrists, barbers, midwives, architects and structural engineers. Included in this list, by inference, was the entire group of so-called drugless healers. Nebraska and Idaho have adopted similar laws. The Illinois law today stands as the most complete and logical method for the solution of this vexing problem that has as yet been found. I would commend a careful study of the Illinois Code to all those interested in this question.

### CONCLUSIONS

Summarizing the discussion of this subject, we are led to the following conclusions:

1. The regulation of those desiring to treat the sick should be based on educational rather than sectarian standards. Such regulation should be administered by the state educational authorities. For economical and efficient administration, the regulation of all professions, occupations and trades supervised by the state government should be placed in the hands of a single state department, which should have as its head an educator of recognized standing and demonstrated executive ability. This department should have the power to appoint examining and advisory committees for each of the different groups, the general educational standards being under the control of the department, which should also control the actual granting of licenses, as well as prosecutions for violations of the law. In the smaller states, in which the creation of a distinct department of the state government would be difficult, for practical reasons, a board of examination and registration, consisting of three educators of recognized standing with power to appoint examining committees for the different occupations, professions, schools, etc., will best meet the local needs.

2. Whatever machinery for regulation is adopted, it should be recognized that the object for such regulation is the protection of the public, and that the people should pay for this protection as they pay for protection from any other danger. Such laws are emphatically not intended for the restriction of competition among practitioners. It is no more the business of the state to protect a physician against competition than it is to protect a drygoods man, a furniture dealer or a grocer. The only justification for restricting the liberty of any person is the public good. It follows, therefore, that the public should pay for this protection. Any scheme whereby a department or bureau of registration and examination is supported by fees is unfair, in that it places the expense of maintaining such a bureau on those who are restricted for the public good. Fees should be fixed at a nominal figure. All fees received for examinations or licenses should be turned into the state treasury, and all expenses of administering the laws and prosecuting violators should be paid out of the state funds by regular appropriations. Under the present system, in most states physicians are not only unfairly and unjustly restricted, but they are also compelled to pay the cost of their own restriction for the public good, a plan that is manifestly unfair and which should be abolished at the earliest possible moment. The people should pay for their own protection, and they should understand that they are paying for it and that they are entitled to it.

A third principle on which the medical profession

should insist is that all persons desiring the same privileges should be required to comply with the same educational standards, without regard to the school from which they graduated or the sect to which they belong. Special sectarian standards are simply a back door to the medical profession, by which the sectarian endeavors to secure equal privileges at a lower cost. The moment equal educational qualifications are insisted on, sectarianism will be wiped out, since no one will elect a limited license as a sectarian if, for the same price in time and money, he can secure an unlimited license as a physician. In application, however, the converse of this proposition must also be recognized; namely, that all persons complying with the same standards are entitled to the same privileges. If the osteopath, the chiropractor or the drugless healer desires to perform all the functions of a physician, he should be required to possess exactly the same qualifications and comply with the same standards, but, having complied with such standards, he should then be allowed the same privileges.

It is not anticipated or claimed that the recognition of these principles or the adoption of the method best exemplified by the Illinois plan will result in a medical milleunium, any more than the adoption of any other single law. This discussion is presented in the hope that it will, to some extent, throw light on this perplexing situation and will enable those physicians who are interested in better social and professional conditions to secure more satisfactory laws, to profit by the experiences and mistakes of the past, thus relieving the medical profession of the embarrassment and confusion in the public mind under which it has labored for half a century, and, especially, that it will enable physicians, in the future, to conserve their strength and energies for professional and public activities, rather than to dissipate them in the useless and unproductive wrangling of the last half century.

## THE CHIROPRACTORS ARE GOOD ADVERTISERS

The chiropractors are good advertisers. They not only use newspapers and billboards, but they use their advertising on blotters, paper bags, fans and other useful articles that are distributed gratis to the public. We also have noted in last month's *Journal* that the churches are worked to the limit to further chiropractic delusion. Probably the next thing will be for our ministers to include in their prayers something like the following: "And, good Lord, in bestowing thy blessings upon the President of the United States and other high personages, please do not forget the members of the chiropractic faith, who promise to deliver the world from all physical infirmities and inflictions—yea, even to the growing of hair on the bald heads of the deacons in our churches—through the medium of simple mechanical manipulation. And, O Lord, we beseech Thee to pour your richest blessings down upon the heads of these wonderful benefactors." In reality, this may not be so much of a joke either, for we shall not be surprised if more than one minister is deluded into offering such a prayer in the sincere belief that he is increasing the chances of the sick and the maimed to become well.—*Journal Indiana State Medical Association.*

## IMPORTANT ANNOUNCEMENT

The medical profession everywhere will be interested in the announcement that The Abbott Laboratories of Chicago have purchased the Dermatological Reserach Laboratories of Philadelphia. This is an advance step for the Abbott Laboratories and will give them deserved recognition among the leading manufacturers of medicinal chemicals.

It will be remembered that the Dermatological Research Laboratories were the first in the United States to produce Arsphenamine during the war when there was such a scarcity of this article; and these laboratories became well known to the medical profession for their patriotic attitude in developing and manufacturing medicinal preparations in this country. By this purchase of the "D. R. I." products, the Abbott Laboratories inherited their prestige.

The Abbott Laboratories acquired control of the Dermatological Research Laboratories on November 1st; and they are continuing to operate them in Philadelphia under the direction of Dr. Geo. W. Raiziss, head of the department of Chemistry, and his corps of specially trained assistants. Orders for "D. R. I." products will be promptly filled from the Philadelphia laboratories or from the home office of The Abbott Laboratories, Chicago, or by any of their branches or distributors.

BAYARD HOLMES.

# Correspondence

## THE ORGANIZATION OF THE MEDICAL PROFESSION INTO A FIXED ARISTOCRATIC TRADES-UNION

Chicago, Ill.,
October 23rd, 1922

To the Editor:—The external economic pressure from industrial medicine, state medicine, and hospital exploitation, upon the medical profession, has not been the only factor in bringing about its embarrassing isolation and helplessness. Some 28 years ago the loose Democratic National Association which had slowly grown up after its first formation in 1850, lost its code of ethics, and submitted to a dual organization, designed to separate the scientific from its corporate activities. In other words, the organization of two American Medical Associations. Two franchises and two houses were established, and like Napoleon's two Chambers of Notabilities, in one it is permitted to talk but not vote, in the other

to vote, but not to talk. The Trustees are a permanent unapproachable body. The open meetings cannot initiate or act on matters of professional policy. Seven years would be the shortest time in which reorganization could be consummated, were the whole body of medical men determined upon it.

With the Star Chamber organization has come a medical press, dictated by the same political patientless medical officers. We have in the U. S. one great National Weekly, under the National Association, one state semi-monthly medical journal under State Organization, but no Independent weekly medical journal (See Congressman Volk's speech, June 30, Extension Remarks).

The score or more of State Monthly medical journals, are with one notable exception, dominated by the National Organization, and edited impersonally. A few special monthly journals, and one or two state journals, and one or two state monthlies remain free from domination from above. The fact remains that the medical press of this country is impersonal and timid. There is scant opportunity for the effective expression of the opinions of the serious physicians, either on the floor of the local medical society or in the medical press; there is no opportunity for the effective expression of the opinions of serious physicians with administrative officials and the lay press. For three years these have been steered almost entirely by "Committee" or "Council" influences from the corporate franchise.

## Society Proceedings

### BOND COUNTY

Tuesday, October 31, 1922, will be long remembered by the members of the Bond County Medical Society, who were on this day the guests of Dr. and Mrs. John H. Gordon at Pocahontas, the occasion being in honor of Dr. Gordon's 80th birthday.

The doctors assembled at Dr. Gordon's office at 10:30 a. m., Dr. C. H. Powell of Pocahontas, president of the association, presiding. After the regular business meeting, Dr. C. H. Diehl of Effingham read a paper on "Public Health and Practicing Physicians." This was a splendid paper and brought quite a discussion, from Drs. Powell, K. B. Luzader, C. B. Johnson, of Champaign, E. W. Feigenbaum of Edwardsville, A. F. Kaeser, of Highland, L. O. Frech, of Decatur, and W. T. Easley of Greenville.

The members of the association, their wives and guests, about 40 in all, were invited to the palatial Gordon home, for dinner, where they found the table groaning under everything that was good to enter into man.

At the head of the table was a large birthday cake, on which were 80 burning candles, one for each year of the doctor's age. The dining room was decorated in orange and black, suggestive of the Hallowe'en season, and large bouquets of cut flowers graced the table.

Following the dinner, toasts were offered to Dr. Gordon by Dr. Easley, Dr. Johnson, Dr. Fiegenbaum, and Dr. Kaeser. Dr. Fiegenbaum spoke of the life of a doctor, from the horse and saddle bags to the present day mode of travel. At the close of the toasts Dr. Johnson suggested that all sing America, and at Dr. Gordon's request they sang the good old song, which always brings tears to the eyes, "God be with you till we meet again."

#### Organize Auxiliary

During the afternoon the wives of the physicians organized the Bond County Medical Society Auxiliary, and the following officers were elected: past president, Mrs. J. H. Gordon; president, Mrs. W. T. Easley; vice president, Mrs. A. M. Keith; secretary-treasurer, Mrs. H. D. Cartmell. The object of the new organization is to create greater friendship and sociability among the doctors and their wives.

At two o'clock the association was again called to order and Dr. L. O. Frech of Decatur addressed the doctors on "Medical Ethics and Organization" and this talk was very much appreciated and created some deep thinking among the medical profession. Dr. C. B. Johnson read a paper, first by prefacing it with the history of his early life. At the close of the business session Dr. Gordon appeared before the doctors clad as an early pioneer doctor, with his saddle bags across his shoulder.

A vote of thanks was extended Dr. and Mrs. Gordon for the splendid dinner and entertainment and a vote of thanks was also extended to the visiting doctors, who read such splendid papers, and all departed wishing the doctor and his noble wife many years to come of the joys of this life.

Among those present were Dr. and Mrs. A. M. Keith, Dr. K. B. Luzader, Dr. and Mrs. W. L. Hall, Dr. and Mrs. C. H. Powell, Dr. and Mrs. Wm. T. Easley, Dr. and Mrs. H. D. Cartmell, Dr. and Mrs. D. R. Wilkins, Dr. and Mrs. E. A. Glasgow. Visiting physicians were Dr. C. B. Johnson, Champaign, Dr. L. O. Frech, Decatur; Dr. C. H. Diehl, Effingham; Dr. E. W. Fiegenbaum, Edwardsville; Dr. C. G. Schmidt, St. Jacob, and Dr. A. F. Kaeser, of Highland.

### COOK COUNTY

#### CHICAGO MEDICAL SOCIETY

*Regular Meeting, November 8, 1922.*

1. Nephritis in Infants and Children.—A. Levinson. Discussion—I. A. Abt and O. Schultz.
2. Diathermy and Radiotherapy in Malignant Tumors.—Gustav Kolischer.

Discussion—D. N. Eisendrath and Robt. A. Arens.

*Regular Meeting, November 15, 1922.*

This being Cancer Week throughout the United States the Chicago Medical Society is having the following program on Cancer:

Pathogenesis—Oscar T. Schultz.

Salient Points in Diagnosis and Treatment of Cancer—

1st. The Breast—Henry F. Lewis.
2nd. Stomach—A. A. Goldsmith.
3rd. Uterus—Arthur H. Curtis.
4th. Prostate and Bladder—Wm. T. Belfield.
5th. Rectum—J. R. Pennington.

General discussion.

*Regular Meeting, November 22, 1922.*

1. Clinical Observations on Infantile Eczema—Jesse R. Gerstley.
   Discussion—David Lieberthal and E. A. Oliver.
2. The Diagnosis and Treatment of Renal Calculi—Daniel N. Eisendrath.
   Discussion—L. E. Schmidt, Gustav Kolischer and John S. Nagel.

## Personals

Mr. James Minnick, formerly director of the Chicago Tuberculosis Institute, was the guest of honor at a banquet in River Forest, November 4, given by his associates of the Social Workers' Country club, on the occasion of his removal to New York where he will enter the employment of the Drexel Mutual Insurance company.

Dr. Cassius C. Rogers gave an address before the Coles-Cumberland Medical Society, in Charleston, November 9.

Dr. Jacob W. Bolotin, attending physician to the Municipal Tuberculosis Sanitarium of Chicago, gave an address before the Livingston County Medical Society at the tuberculosis sanitarium in Pontiac, November 9.

Dr. James M. Neff, Chicago, was the principal speaker at a banquet of the Kankakee County Medical Society in that city, November 8.

The Pasteur lecture for 1922, of the Institute of Medicine of Chicago, was delivered by Dr. Jacques Loeb of the Rockefeller Institute, November 24.

Drs. Charles E. Wilkinson, Danville, and H. N. Rafferty, Robinson, were elected president and secretary, respectively, of the Wabash Valley Aesculapian Society, recently at the annual meeting in Paris.

In the case of Dr. Preston O. Carrico, Ashmore, charged with manslaughter through an illegal operation, it is reported that the verdict of guilty was set aside and the case remanded for a rehearing.

Dr. Leo B. Couch, Prairie du Rocher, is recovering from the effects of coming in contact with a live wire when fixing a radio aerial wire. The first finger of his left hand was burned entirely off.

According to reports, the jury, in the case of Dandurand against Dr. Shirley W. Lane, Kankakee, returned a verdict of not guilty, October 13, and completely exonerated Dr. Lane from blame. He was charged with malpractice in the setting of a fractured arm.

Dr. Harlan W. Long, head of the Peoria U. S. War Veterans' Bureau, has received the French bronze medal of honor for work in epidemics. Dr. Long served as major, M. C., U. S. Army, during the World War, and the French Ministry of Social Hygiene and Welfare awarded the medal in recognition of his services in treating influenza in southern France.

Dr. Justus V. White, of Decatur, has received from the United States Veterans' Bureau the appointment of Attending Specialist in Eye, Ear, Nose and Throat for the Decatur district.

## News Notes

—Cancer Week, November 12-18, was generally observed by suitable programs at medical and public meetings. The Chicago Medical Society had such a program at the meeting of November 15. A clinic was held in St. Joseph Hospital, Elgin, on the 17th with a public meeting in the High School in the evening devoted to the subject of cancer. Dr. F. A. Besley of Chicago gave an address on that subject illustrated by films. Dr. A. B. Kanavel of Chicago addressed a large audience in Aurora on Cancer, November 15.

—The National Tuberculosis Association plans to raise $5,000,000 in its seal drive this month, Illinois' quota to be $200,000 outside of Chicago. The State Association will distribute 25,000,000 seals through its local branches.

—Illinois has at last been admitted into the "registration area" for births by the U. S. Bu-

reau of the Census, as the result of a thorough checking of the certificates returned in June.

—The second annual meeting of the Association of Military Surgeons of Illinois will be held at the Army and Navy Club, Chicago, November 20, under the presidency of Col. Gustavus Blech. Dr. Frank Billings will address the meeting.

—Ground has been broken for the new laboratory of the department of hygiene and bacteriology of the University of Chicago, which when completed will be devoted to bacteriologic and chemical research. It will be erected at a cost of $50,000.

—It is reported in the press that the grand jury investigating irregularities at the Municipal Contagious Disease Hospital exonerated Dr. Arthur E. Gammage from responsibility.

—If the Children's Memorial Hospital can raise the sum of $1,000,000 within two years for an endowment fund, $333,333 will be donated to it, under the will of John P. Wilson, Sr. If the endowment is not subscribed the institution will only receive the sum of $50,000.

—Under the auspices of the Chicago Painters' District Council, a health campaign will be conducted among union painters for the purpose of decreasing occupational diseases and injuries, it was announced, November 12. Members of the union will be examined by physicians at regular intervals as part of the campaign.

—At a meeting of the Iowa and Illinois Central District Medical Association, held in Davenport, Iowa, Dr. James Dunn read a paper on "Some Points in Infant Feeding," and Dr. Rollin T. Woodyatt, associate professor of medicine at Rush Medical College, Chicago, read a paper on "The Management of Diabetes Mellitus."

—Contracts amounting to almost $500,000 have been let for the medical research library to be erected in connection with the medical group of the University of Illinois. The building will comprise five stories of library and laboratory facilities, with adequate equipment for all kinds of medical research. The institution will be erected south of Cook County Hospital. It will be in Gothic style, finished in brick and stone.

—Prof. D. Pahle, assistant professor of physics at the University of Frankfort, Germany, arrived in Chicago, November 18. Under the auspices of the American Society for the Control of Cancer, he will give a series of demonstrations of the deep-therapy roentgen-ray machine at the Norwegian-American Hospital. Dr. Pahle is assistant to Dr. Dessauer.

—Lectures will be given by members of the Chicago board of education to instruct parents of school children in morality, ethics and sex hygiene, it was announced, November 17. The lectures will be given at night in the school buildings. Trustees who will lecture are Drs. Klarkowski, Sadie Bay Adair, John Dill Robertson, Mr. Hart Hanson and J. Lewis Coath. There are approximately fifty community centers and thirty evening schools, in addition to the parent-teacher organizations in Chicago.

—An ordinance was introduced at a meeting of the Chicago city council, November 15, to create a health and safety commission composed of the chief of police, the health commissioner, the building commissioner and two civilians. The purpose of the commission was set forth as follows:

"It shall be the duty of the commission to make a complete and comprehensive survey of all premises and neighborhoods in which it is alleged or suspected that prostitution is carried on, for the purpose of enforcing the health, sanitary, safety and police regulations, and for the purpose of securing the maximum protection for the public against the dangers of prostitution, disease, fire and accident existing therein."

Under the measure, the commission would be given power to enforce all laws, ordinance and regulations pertaining to vice and prostitution.

—Following the examination of 141,811 school children in Chicago, health officials found that 88,343 had defective teeth, or oral conditions that needed treatment. The commissioner of health, with the cooperation of Dr. Arthur D. Black, dean of the Northwestern Dental College, has made arrangements by which certain groups of school children will be given dental treatment at that institution. It is planned to take care of at least twenty children daily. A charge of from 15 to 25 cents will be made for those whose parents are able to pay.

—The National Board of Medical Examiners

announces the following dates for its next examinations:

Part I. February 12, 13 and 14, 1923.

Part II. February 15th and 16th, 1923.

The fees for these examinations have been continued at the reduced rate for another year. Applications for these examinations must be forwarded not later than January 1, 1923. Application blanks and circulars of information may be obtained from the Secretary of the National Board, Dr. J. S. Rodman, Medical Arts Building, Philadelphia, Pa.

—Dr. S. J. McNeill, councilor of the third district of the Illinois State Medical Society, reorganized the DuPage County Medical Society at Wheaton, Ill., November 23 with a membership of forty. Dr. E. H. Ochsner, president-elect of the Illinois State Medical Society, gave an interesting discourse on what the Illinois State Medical Society has done for higher medical education. Dr. Chas. B. Humiston, past president of the State society, gave an interesting talk on items relating to the progress of medicine. Dr. C. B. King, chairman of the Medico-Legal committee of the State society, gave an interesting talk on the Medico-Legal aspect of the Illinois State Medical Society. Dr. F. O. Fredrickson, president of the North Shore branch of the Chicago Medical Society, gave a talk on the management of the County Medical Society. Dr. Richard B. Oleson gave a talk on the history of the DuPage County Medical Society. A very profitable and enthusiastic evening was enjoyed by all present and much stimulation was induced for furthering DuPage County Medical Society.

## Deaths

Martin Bowen Arnold, Chicago; Eclectic Medical Institute, Cincinnati, 1864; died, November 12, aged 87, from pneumonia.

Charles C. Bernard, Chicago; Chicago Homeopathic Medical College, 1882; member of the Illinois State Medical Society; attending eye and ear surgeon to the Illinois Masonic Hospital; died, October 29, aged 66, from pneumonia.

William Burr Caldwell, Monticello, Ill.; Rush Medical College, Chicago, 1875; also a druggist; died, October 11, aged 83, from senility.

Susie L. Burkett, Chicago; Harvey Medical College, Chicago, 1905; specialized in gynecology; died, November 3, aged 47, from carcinoma of the stomach and liver.

Henry C. Dale, Chicago; Bennett Medical College, Chicago, 1883; died, November 15, aged 66, from cerebral hemorrhage.

Theodore Drosdowitz, Chicago; Rush Medical College, Chicago, 1897; died, October 21, aged 54, from heart disease.

Gustav A. Futterer, Chicago; University of Wurzburg, Germany, 1893; professor of gastro-enterology at the Chicago Polyclinic; formerly served with the M. C., U. S. Army; consulting physician to the former Marion Sims Sanatorium; member of the Chicago Pathological Society, Society of Medical History of Chicago, and the German Congress of Internal Medicine; aged 66; consulting physician at the Columbus Hospital, where he died, November 3, from heart disease.

William McMinne Hanna, Aurora, Ill.; Rush Medical College, Chicago, 1886; Civil War veteran; died, November 4, aged 82, from senility.

Thomas M. Johnson, Galatia, Ill.; Marion-Sims College of Medicine, St. Louis, 1895; aged 55; was found dead in his garage, October 26, from heart disease.

Frank Smith Lower, Chicago; Jenner Medical College, Chicago, 1910; also a chiropodist; aged 40; died, November 3, from the effects of an overdose of morphin; presumably self-inflicted, while despondent over ill health.

Arthur W. Oharro, Chicago; Rush Medical College, Chicago, 1896; died, October 20, aged 52, from carcinoma of the tongue.

William Augustus Quinn, Chicago; College of Physicians and Surgeons, Chicago, 1894; member of the Chicago Dermatological Society; professor of dermatology and syphilology at Loyola University School of Medicine, Chicago; formerly associate instructor in skin and venereal diseases at Rush Medical College; on the staffs of the St. Joseph's, Mercy, Frances Willard and St. Bernard's hospitals; died, October 17, aged 53, from myocarditis and chronic nephritis.

John H. Riley, DeKalb, Ill.; Baltimore University School of Medicine, 1899; member of the Illinois State Medical Society; formerly on the staff of St. Elizabeth's Hospital, Chicago; at one time surgeon on the Red Star liners; died, November 8, aged 47, at the Wilgus Sanitarium, Rockford.

William Sondericker, Woodstock, Ill.; Hahnemann Medical College and Hospital of Chicago, 1887; died, October 24, aged 60.

John M. Wilcox, Clinton, Ill.; Northwestern University Medical School, Chicago, 1879; member of the Illinois State Medical Society; former president of the county medical society and of the pension board; surgeon to the John Warner Hospital; member of the school board and local surgeon for the Illinois Central Railroad; died, October 23, aged 76, from chronic nephritis.